THE LANCET.

No. 4248. Vol. CLXVIII. LONDON, SATURDAY, JANUARY 28, 1905. [Pp. 120+40.

CONTENTS.

A CLINICAL LECTURE on Richter's Hernia. Delivered at St. Mary's Hospital on Dec. 15th, 1904, by V. WARREN LOW, M. B., B. S. Lond., F. R. C. S. Eng., Surgeon to Out-patients at the Hospital.. 205

ORIGINAL ARTICLES.

Myelopathic Albumosuria. By C. W. PAGET MOFFATT, M.A. Lond., M.B., B.C. Cantab., M. R. C. S. Eng., L. R. C. P. Lond.—(*Illustrated*)..... 207

A Case of Encysted Cerebral Abscess. By PETER PATERSON, M. B. Glasg., M.R.C.S. Eng., Assistant Surgeon to the Glasgow Royal Infirmary 214

Researches into the Etiology of Carcinoma: On the Presence of Plasmodiophoræ in Carcinomatous Tumours and the Successful Culture of the Parasites. By W. FORD ROBERTSON, M. D Edin., Pathologist to the Scottish Asylums; and HENRY WADE, M.B. Edin., F.R.C.S. Edin., Conservator of the Museum of the Royal College of Surgeons of Edinburgh.—(*Illustrated*) 215

The Results of Two Cases of Injection of Paraffin. By F. C. WALLIS, F.R.C.S. Eng., Surgeon to Charing Cross Hospital, St. Mark's Hospital, and the Grosvenor Hospital 221

On the Relation between Various Atmospheric Conditions and the Occurrence of Cerebral Hæmorrhage. By JAMES W. RUSSELL, M.A., M.D. Cantab., M. R. C. P. Lond., Assistant Physician to the Birmingham General Hospital 222

The Ovarian Ligament and its Relation to Pregnancy occurring after Ablation of the Ovaries. By JOHN H. DAUBER, M.B., B.Ch. Oxon., M.R.C.P. Lond., Physician with Care of Out-patients to the Hospital for Women, Soho 224

A Case of Septate Uterus and Vagina; Pregnancy in the Right Half; Delivery. By CLAYTON A. LANE, M.D. Lond., Captain, I.M.S. 225

Army Medical Organisation in Bavaria. By F. HOWARD, M.D. St. And., Colonel, Army Medical Staff (retired)..... 246

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Depression of the Left Parietal Bone in an Infant with Marked Pressure Symptoms. By D. ASHLEY WILSON, M.B., Ch.B. Glasg.... 226

A Case of Severe Cough and Loss of Weight due to Round Worms in the Intestine. By PROSPER ST. LEGER LISTON, L.R.C.P., L.R.C.S. Irel. 226

A MIRROR OF HOSPITAL PRACTICE.

WESTMINSTER HOSPITAL:
A Case of Conjunctival Arthritis in an Adult. (Under the care of Dr. W. Murrell) ... 227

MEDICAL SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY:
An Analysis of 99 Cases of Inoperable Carcinoma of the Breast treated by Oöphorectomy 227

MEDICAL SOCIETY OF LONDON:
Discussion on Hæmaturia..... 228

LIVERPOOL MEDICAL INSTITUTION:
Some Points in the Diagnosis and Treatment of Typhoid Fever..... 229

ROYAL ACADEMY OF MEDICINE IN IRELAND:
Exhibition of Specimens 230

MEDICO-LEGAL SOCIETY:
The Development of Invisible Finger-prints 230

CHELSEA CLINICAL SOCIETY:
The Anæsthetisation of Children 230

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY:
Exhibition of Specimens 231

LARYNGOLOGICAL SOCIETY:
Exhibition of Cases 231

ÆSCULAPIAN SOCIETY:
Glycosuria 231

ROYAL MEDICAL SOCIETY, EDINBURGH:
Congenital Pyloric Spasm ... 231

BURNLEY & DISTRICT MEDICO-ETHICAL ASSOCIATION:
Puerperal Septic Infections... 232

MIDLAND MEDICAL SOCIETY:
Exhibition of Cases 232

REVIEWS AND NOTICES OF BOOKS.

An Atlas of Human Anatomy. By Carl Toldt, M.D., assisted by Professor A. Dalla Rosa, M.D. Translated from the Third German Edition by M. Eden Paul, M.D. Brux. 232

The Chief Operations of Ophthalmic Surgery: A Practical Guide for Students. By Harold B. Grimsdale, M.B., B.C. Cantab., F.R.C.S. Eng.... 232

An Account of the Tapeworms of the Genus Hymenolepis Parasitic in Man, including Reports of Several New Cases of the Dwarf Tapeworm (H. Nana) in the United States. By Brayton H. Ransom 233

Electricité Médicale. By Dr. Guilleminot..... 233

The Transactions of the Hunterian Society, 1903-1904..... 234

The Food of the Future: a Summary of Arguments in Favour of a Non-flesh Diet. By Charles W. Forward..... 234

Home Nursing and Hygiene Handbook. By J. Wallace Anderson, M. D. Glasg., F.F.P.S. Glasg., and George H. Edington, M. D. Glasg., F.F.P.S. Glasg. 234

The Public Schools Year-book, 1905..... 234

The Schoolmaster's Year-book and Directory, 1905 234

Diaries 234

The Field Naturalists' Quarterly 234

LEADING ARTICLES.

APPARENT DEATH AND DEATH CERTIFICATION 235

THE GUILDHALL CONFERENCE ON FEEDING SCHOOL CHILDREN..... 235

THE INFLUENCE OF CLIMATE ON THE INCIDENCE OF DISEASE.... 237

MAJOR SEAMAN'S ADDRESS BEFORE THE INTERNATIONAL CONGRESS OF MILITARY AND NAVAL SURGEONS AT ST. LOUIS 238

ANNOTATIONS.

The late Sir John Simon's Surgical Writings 239

The Obstetric Duties of the Army Surgeon in America ... 239

The Definition of Whisky in Olden Times 240

Medical Articles in Lay Journals; the Prevalence of Hookworm Disease in Porto Rico... 240

Collapse during Examination of a Post-pharyngeal Abscess: Re-establishment and Maintenance of the Circulation for Four Hours by means of Massage of the Heart 241

The Sale of Patent Medicines in New Zealand 241

The Adulteration of Brandy..... 242

The Director-General of the Indian Medical Service 242

The Management of the Delirious Patient 242

The Workmen's Compensation Act and Surgical Operations.. 243

Multiple Gestation 243

Types of Alcoholic Insanity..... 244

Señor Manual Garcia's Centenary 244

The Etiology of Carcinoma 244

Public Health of the Royal Borough of Kensington 245

The Influence of Hæmorrhage on the Composition of the Blood Plasma 245

LOOKING BACK.

(From THE LANCET, Saturday, Jan. 27, 1827) 246

VITAL STATISTICS:
Annual Birth-rates and Death-rates from the Seven Chief Epidemic Diseases in England and Wales during 1904 251

Health of English Towns 251

Health of Scotch Towns..... 251

Health of Dublin 251

SPECIAL ARTICLES.

Twelfth Annual Report (for 1903) of the Medical Officer of Health of the Administrative County of London 247

The Central Midwives Board ... 248

The Russian Crisis: Action of the St. Petersburg Medical Practitioners 249

The Previous Examination at the University of Cambridge.. 249

Asylum Reports 249

The Services 252

Medical Notes from the Far East.—(*Continued*) 256

Chicago: Unhealthy Work in the Stockyards; Shameless Indifference to the Insanitary Condition of the Building and the Cattle Pens; Pollution of the Subsoil; the Need for Legislative Interference.—(*Concluded*)..... 258

Cholera and Plague in the Near East 260

Notes from India 261

Birmingham 262

Liverpool 262

Leeds..... 263

Wales and Western Counties Notes..... 263

Scotland 264

Ireland 265

Switzerland..... 265

New York..... 266

CORRESPONDENCE.

The Treatment of Typhoid Fever (Dr. Francis Everard Hare) 253

The Treatment of Strabismus (Dr. Landolt).—(*Illustrated*)... 254

The Principles of Treatment of Pneumonia (Dr. A. G. Auld).. 254

Ankylostomum Duodenale (Dr. F. M. Sandwith) 255

Fracture of the Anterior Fossa of the Skull Dividing the Optic Nerve (Mr. Simeon Snell)..... 255

Hessing's Splint and Contracture at the Knee (Mr. T. H. Openshaw) 255

West Africa as a Health Resort (Professor Rubert Boyce) 255

The Causation of Sex 256

The Action of Anæsthetics on Plants (Dr. R. Macdonald) ... 269

The Climate of Manila 269

Lady Hospital Managers (Mr. Henry Rundle) 269

The Case of Dr. A. D. Griffiths (Dr. Alex. P. Fiddian) 269

A Warning 269

The Fees of Medical Witnesses.. 269

Improvements in the Technique of Vaccination (Mr. H. S. Souttar) 269

Yanatas (Mr. J. L. W. Kitching) 27

The Choice of an Anæsthetic (Dr. A. M. Barford) 270

MEDICAL NEWS.

Pass-lists of the University of Cambridge and Society of Apothecaries of London..... 266

Foreign University Intelligence 266

University of Oxford 266

Royal Waterloo Hospital for Children and Women..... 266

University College, Bristol 267

Royal London Ophthalmic Hospital Guild (Moorfields Eye Hospital) 267

The Ladies' Health Society, Manchester 267

Books, &c., received..... 267

Appointments 268

Vacancies..... 268

Births, Marriages, and Deaths... 268

Notes, Short Comments, and Answers to Correspondents ... 269

Medical Diary 270

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX.

MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

COVER. PAGE

ADLARD & SON:—
Shaw..... Essays on Insanity 1

ARNOLD:—
Hutchison .. Diseases of Children.... 1

BAILLIERE TINDALL & COX:—
Bodon ..... Hernia..... 1
" ..... Descended Testis 1
Powell ..... Dental Surgery 1
Shaw-Mackenzie. Inoperable Cancer 1

BALF, SONS & DANIELSSON:—
Hutchinson. Facial Neuralgia 1

CHURCHILL, J. & A.:—
Taylor ..... Practice of Medicine .. 1

CONSTABLE & CO.:—
Battle & Corner .... Diseases of the Appendix 1
Laxmoniier.. Methods of Treatment.. 1

GLAISHER:—
Wright..... Treatment of Hæmorrhoids, &c. 1

LEWIS:—
Bastian..... Aphasia, &c. 1
" ..... The Brain as an Organ of Mind 1
" ..... Paralyses 1
" ..... Forms of Hysterical &c. Paralysis 1
Jones..... Medical Electricity 1
Martindale & Westcott .. Extra Pharmacopœia .. 1
Rose ..... Curvature of the spine 1

MEDICAL PUBLISHING CO.:— PAGE
Lane..... Chronic Constipation .. 1

PENTLAND Y. J.:—
Berry..... Manual of Practical Ophthalmology 1
Thomson & Miles..... Manual of Surgery 1

SAUNDERS & CO.:—
Saunders' Important Books 1

MEDICAL LIBRARIES, &c.:—
Davidson—Sight-Testing for the G.P. 1

BAILLIERE, TINDALL & COX:— PAGE
Barwell .... Lateral Curvature of the Spine, &c. 2
Bigg ..... Constipation 9
De Santi .... Malignant Diseases of the Larynx 9
Gant ..... Auto-Biography 3
Gould ..... Dictionary of New Medical Terms 3
Herbert .... Cataract Extraction 9
Lake ..... Diseases of the Ear 9
Latham .... Diagnosis & Treatment of Pulmonary Tuberculosis 9
Mayo Robson Cancer and its Treatment 3
McKay ..... Section Cases 3
Owen..... Cleft-Palate, &c. 9

BALF, SONS & DANIELSSON:—
Moullin .... Inflammation of the Appendix 9
" ..... Ulcer of the Stomach .. 9

CASSELL & CO.:— PAGE
Owen..... Surgical Diseases of Children 9

CHURCHILL, J. & A.:—
Harrison.... Stone, Prostate, &c. 8

KEGAN PAUL & CO.:—
Taylor ..... Diseases of the Eye 8

LEWIS:—
Corfield .... Dwelling Houses 8
Martindale & Westcott .. Extra Pharmacopœia .. 9
Moullin .... Enlargement of the Prostate 9
" .... Inflammation of the Bladder 9
New Sydenham Society:—
Atlas of Clinical Medicine, &c. 8
Parkes & Kenwood.. Hygiene, &c. 8
Powell, Sir R. D..... Treatment of Diseases, &c., of the Heart 8
" ..... Diseases of the Lungs &c. 8
Radcliffe-Crocker .. Diseases of the Skin 8
Snelling .... On Periodical Headache or Migraine 8
" .... On Epilepsy 8
" .... On Movable Kidney 8
" .... Treatment of Diseases of the Nervous System .. 8
" .... Diseases of the Brain and Spinal Cord 8
Weakes .... On Deafness, &c. 8

MACMILLAN & CO.:—
Archives of the Middlesex Hospital .. 9
Lockwood .. The Surgery of Appendicitis 8

MURRAY, J.:— PAGE
Lees ..... Acute Visceral Inflammation 2

PENTLAND, Y. J.:—
Edinburgh Medical Journal 6
Lockwood .. Aseptic surgery 2
" .. Cure of Hernia, &c. 2

REBMAN:—
Archives of the Roentgen Ray 6
Cleaves.... Light Surgery 6
Pruned.... Radiotherapy 6
Jacobi ..... Portfolio of Dermochromes 6

RENSHAW:—
Wood ..... Application of Trusses 10

SAUNDERS & CO.:—
Dürck ..... General Pathologic Histology 7
Hirst ..... Diseases of Women 7
McFarland .. Pathology 7
Medical Hand-Atlases 7
Moynihan .. On Gall-stones 7
Rolleston.... Diseases of the Liver 7

SMITH, ELDER & CO.:—
Keetley .... Orthopædic Surgery.... 10
" .... Gastric Ulcers..... 10
" .... Complicated Fractures 10
Tirard ..... Albuminuria, &c. 8

WILLIAMS & NORGATE:—
Stephens & Christophers Practical Study of Malaria 9

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering 8

OFFICIAL AND GENERAL ANNOUNCEMENTS.

APPOINTMENTS VACANT:—
Ancoats Hospital, Manchester 79
Bolton Infirmary and Dispensary 80
Bristol Royal Infirmary 80
Chesterfield and North Derbyshire Hospital 79
Chester General Infirmary 79
City of London Hospital for Diseases of the Chest, Victoria-park..... 80
Craig-Leith Poorhouse and Hospital, Edinburgh 80
Crompsall Workhouse, Manchester .. 79
Devonshire Hospital, Buxton, Derbyshire 80
East London Hospital for Children, &c., Shadwell 80
Eccles and Patricroft Hospital 79
Evelina Hospital for Sick Children, Southwark 79
General Infirmary, Leeds 80
Hos. for Consumption and Diseases of the Chest, Brompton 80
Hospital for sick Children, Great Ormond-street 79
Kent and Canterbury Hospital 80
King's College 79
Lewisham Union..... 80
Manchester Children's Hos., Pendlebury 80
Monmouthshire Asylum, Abergavenny 80
Patrick Stead Hospital, Halesworth .. 80
P. B., St. Helens 80
Rochdale Infirmary 79
Royal Air Hospital, Schorndorf 79
Royal Hospital for Diseases of the Chest, City-road 80
School of Medicine, Cairo 79
Sheffield Royal Hospital 79
Somerset and Bath Lunatic Asylum, Wells 79
South Devon and East Cornwall Hospital, Plymouth 80
Sunderland Infirmary 79
Teignmouth Hospital, S. Devon 80
Walsall and District Hospital 81
Worcester General Infirmary 79

ASSISTANCIES, MEDICAL:—
Bailey, Worcester 86
Brotherton, Wood Green..... 86
Bullen, Balham 87
Castle, Hampstead 86
Medicus, Cupar Fife 88
Western, Leeds 86
Medicus, Sheffield 86
No. 209, L.O., Strand..... 86
No. 240, L.O., Strand..... 86
No. 241, L.O., Strand..... 86
No. 242, L.O., Strand..... 86
No. 243, L.O., Strand..... 86
No. 247, L.O., Strand..... 86
No. 250, L.O., Strand..... 86
No. 254, L.O., Strand..... 86
No. 255, L.O., Strand..... 86
No. 256, L.O., Strand..... 87
No. 257, L.O., Strand..... 86
No. 260, L.O., Strand..... 86
No. 261, L.O., Strand..... 86
No. 264, L.O., Strand..... 86
No. 266, L.O., Strand..... 86
No. 270, L.O., Strand..... 86
Robbins, Westbourne-square 86
Stocker, Strand 86
Turner, Adelphi 86

ASYLUMS, HOMES, &c.:—
Aberystwith, the Biarritz of Wales .. 73
Altadore Sanatorium, Co. Wicklow .. 78
Ashwood House, Kingswinford 71
Barnwood House Hospital 73
Bedcroma Manor, Bournemouth 77
Buntingford House Retreat, Herts .. 74
Camberwell House, Peckham-road.... 78
Clarence Lodge, Clapham-park 77
Convalescent Home, Highgate..... 78
Cripplegate, The, Nottingham 72
Coronation Home, Hove 78
Cotswold Sanatorium 77
Crooksbury Sanatorium, Surrey..... 75
Dalrymple House, Rickmansworth .. 71
Dartmoor Sanatorium 75
David Lewis Colony, Alderley Edge .. 71
Gesson Johns' Sanatorium, Parkwood 77
Dr. Rashleigh's Sanatorium, Dartmoor 77
Dunscore Park Sanatorium, Pegsdon 77
East Anglian Sanatorium, Nayland .. 76
Fairford Retreat, Gloucestershire 71
Ferguson, Barnet 77
Flower House, Oxford..... 72
Grove House, Church Stretton..... 72
Grove, The, Catton, Norwich 73
Hailey Open Air Sanatorium, Ipsden.. 77
Haydock Lodge, Newton-le-Willows.. 74
Harrison, Dorchester 71
High Shot House, Twickenham 78
Hitch, Mrs., Hollington 77
Home Sanatorium, Bournemouth 77
H., Vincent-square 77
Invermith Lodge Retreat, Collieburgh 73
Lady Superintendent, Brighton 76
Lady Superintendent, Streatham 76
Lawson, Nordrach-on-Dee, Banchory 73
London Open-Air Sanatorium, Wokingham 76
Lufton Sanatorium, Purbury 75
Maternity Home, New King's-road .. 76
Matlock House Hydro, Matlock 71
Melborne House, Leicester 72
Middleton Hall, Co. Durham 71
Mold House, Tamworth 72
Moorcote Open-Air Sanatorium, Bverley 75
M. W., Leeds..... 76
Nordrach in Wales..... 74
Nordrach-upon-Mendip Sanatorium .. 74
Northlands Retreat, Wandsworth 78
Northwoods House, Winterbourne..... 73
Norwood Sanatorium 78
Ochil Hills Sanatorium, Kinross-shire 78
Owlscotes, Boscombe..... 77
Overdale, Whitefield 71
Painswick Sanatorium..... 75
Park House Convalescent, &c., Home, Waterlooville..... 77
Plas-yn-Dinas, Merthyr-Tydfil..... 74
Plympton House, South Devon 72
Royal Sea-bathing Hospital, Margate 76
Shaftesbury House, Formby..... 73
Small-pox, &c., Hos., south Mimms .. 77
Springfield House Private Asylum, Bedford 71
St. Andrew's Hospital, Northampton 72
St. Luke's Hospital, E.C. 72
Stocker, Craven-street 77
Stone House, Canterbury 77
Stretton House, Church Stretton 72
Thurlestone Grange, nr. Rotherham 72

ASYLUMS—(Continued).
Tower House, Leicester 72
Vale of Clwyd Sanatorium..... 74
Verset-les-Baine 80
Warneford Asylum, Oxford 72
West Malling-place, Kent 73
Weston-super-Mare Nursing Home .. 71
Whitmead Hill Sanatorium, Faraham 76
Winchester House, Kingston-hill 71
Wexford House, Hester 72
Wye House, Buxton 72
Wyke House, Isleworth 73
Yarrow Convalescent Home, Broadstairs..... 73

BATHS:—
Smedley's, Matlock 79

FINANCIAL, &c.:—
Birkbeck Bank 79
English and Scottish Law Life Office.. 79
Equitable Reversionary Interest Soc. 79

HOTELS:—
Barton Court Hotel, New Milton 71
Montreux House and Chateau, Belmont 71
Mount Tabria—
Grand Hotel Mont Pelerin 72

HOUSE & ESTATE AGENTS:—
Hillott, Son & Boyton, Vere-street.... 84
Martin & Son, Exeter 84
Mortimer, Mark-lane 81
Platts & Son, Scarborough..... 84

LIFE & FIRE ASSURANCES:—
Prudential 79

MEDICAL ACCOUNTANTS, &c.:—
Turner 85

MEDICAL AGENTS:—
Hall & Hardwicke 81
Lee & Marns..... 82
London Medical Agency 82
Manchester Medical Agency 82
Manchester Medical, &c., Association 82
Medical Agency 82
Moore 84
Needes, Herbert 84
Needes, J. G. 81
Orridge..... 82
Peacock & Hadley 84
Scholastic Clerical &c. Assoc..... 83
Southern Medical Agency 82
Turner 87
Wilson & Son 81

MEDICAL SCHOOLS (London):—
Cooke's School of Anatomy 87
West London Post-Graduate College.. 86

MEDICAL SCHOOLS (Provincial):—
University of Birmingham..... 8

NURSING INSTITUTES:—
General Nursing Association 87
Hos. for Sick Children, Gt. Ormond-st 71
Leeds Trained Nurses' Institution 71

NURSING INST.—(Continued).
London Nurses' Association 10
Male and Female Nurses' Assoc..... 10
Male Nurses' Association 10
Male Nurses' Co-operation..... 10
Middlesex Hos. Trained Nurses' Inst. 70
Nurses' Co-operation, Portland-place 70
Queen Charlotte's Lying-in Hos..... 70
St. John's House..... 70
Temperance Male and Female Nurses' Co-operation 10
Temperance Male Nurses' Co-operation 10
York-road General Lying-in Hospital, Lambeth 70

OFFICIAL NOTICES:—
College of Preceptors..... 87, 91
London Hospital Medical College 87
London Post-Graduate Association .. 87
London Throat Hospital 88
Mount Vernon Hospital for Consumption 87
Naval Medical Examination..... 83
Samaritan Free Hospital for Women 84
St. John's Hos. for Skin Diseases 87
Surgeon's Hall, Edinburgh 83
Surgical Aid Society 87
University College, London 87

PARTNERSHIPS & PRACTICES:—
Evans, Hereford 85
Hall & Hardwicke, Stroud 85
Heald & Goodwin, Basinghall-street.. 84
M. D., Penge 85
No. 199, L.O., Strand..... 85
No. 207, L.O., Strand..... 85
No. 213, L.O., Strand..... 85
No. 221, L.O., Strand..... 85
No. 244, L.O., Strand..... 85
No. 245, L.O., Strand..... 84
No. 246, L.O., Strand..... 85
No. 249, L.O., Strand..... 85
No. 252, L.O., Strand..... 85
No. 254, L.O., Strand..... 85
No. 258, L.O., Strand..... 85
No. 259, L.O., Strand..... 85
No. 262, L.O., Strand..... 85
No. 263, L.O., Strand..... 85
No. 264, L.O., Strand..... 85

RAILWAY & STEAMSHIP CO.'S:—
Elder, Dempster & Co.—
Trips to Jamaica 78
New Zealand Shipping Co..... 79
Orient-Pacific Line Pleasure Cruises.. 79
Royal Mail Steam Packet Co.—Tours 78

SCHOOLS, PREPARATORY, &c.:—
Manchester Physical Training College 83
Ramsgate—Aberdeen House School . 86
Swedish Gymnas. & School, Cromwell-road 86

TUTORS & LECTURERS:—
Fellowships .. 91 | No. 429, L.O. .. 89
Gemmell ..... 89 | No. 461, L.O. .. 89
Gooch ..... 86, 89 | No. 462, L.O. .. 89
Kerin ..... 89 | Van Praagh.... 89
Knight ..... 89 | Weymouth.. 86, 89

(For Index to Trade and Miscellaneous Advertisements see page 4.)

SOME OF

BAILLIÈRE, TINDALL & COX'S

January Publications.

Price 21s. net.

DICTIONARY OF NEW MEDICAL TERMS.

Contains 38,000 Terms.

By GEORGE M. GOULD, M.D.

This work contains 571 double-column pages of Terms, Definitions, Tables, &c., which have not hitherto appeared in any other book, the whole bound in half-morocco with thumb-cut Index, forming a SUPPLEMENT to GOULD'S "ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES" (Fifth Edition, price £2 net).

Price 3/6 net.

CANCER AND ITS TREATMENT

Demy 8vo, cloth, 70 pp.

By A. W. MAYO ROBSON, D.Sc., F.R.C.S. Eng.,

Senior Vice-President and Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England.

DIAGNOSIS and MODERN TREATMENT of

PULMONARY TUBERCULOSIS.

By ARTHUR LATHAM,

M.A., M.D.Oxon., M.A.Cantab., F.R.C.P.

Assistant Physician and Lecturer on Practical Medicine to St. George's Hospital; Assistant Physician at the Brompton Hospital for Consumption and Diseases of the Chest.

SECOND EDITION.

Price 5/- net.

AUTOBIOGRAPHY OF F. J. GANT, F.R.C.S.,

Senior Surgeon to the Royal Free Hospital; late President of the Medical Society of London; formerly Staff Civil Surgeon to Her late Majesty Queen Victoria's Military Hospitals, Crimea and Scutari.

Pp. vii. + 200. With Portrait of the Author.

Price 3/6 net.

"He (Mr. Gant) has something to say upon many topics."—DERBY EXPRESS.

PREPARATION and AFTER-TREATMENT of

SECTION CASES.

By W. J. STEWART McKAY,

M.B., M.Ch., B.Sc.,

Senior Surgeon to the Lewisham Hospital for Women and Children, Sydney.

Pp. 672, with 10 Plates and 134 Drawings.

Price 15/- net.

"I feel sure that all who practise abdominal surgery will welcome this work and learn much, as I have done, from its perusal."—*Extract from the Introduction, by Christopher Martin, F.R.C.S., of Birmingham.*

Pp. xii. + 103, with 42 Illustrations.

Price 3/- net.

LATERAL CURVATURE OF THE SPINE AND PELVIC DEVIATIONS.

SIXTH EDITION.

By RICHARD BARWELL, F.R.C.S., Consulting Surgeon to the Charing Cross Hospital; Surgeon to the Cripples' Home, &c.

London: BAILLIÈRE, TINDALL & COX, 8, Henrietta St., Covent Garden

INDEX—(CONTINUED).

TRADE AND MISCELLANEOUS ADVERTISEMENTS.

COVER.

PAGE

CHEMISTS & DRUGGISTS:—
McKesson & Robbins—
Gelatine-coated Pills ... iii

FOODS:—
Valentine's Meat Juice Co.—
Meat Juice ... ii

MED. & SURG. APPLIANCES:—
Hooper & Co.—
Elastic Water or Air Beds and Cushions ... iv
Elastic Hot Water Bottles for Feet, Stomach, Chest, &c. ... iv
Spiral Elastic Bandages ... iv

MINERAL WATERS:—
Ingram & Royle, Ltd.—
Leviso Water ... ii

WATCHMAKERS, &c.:—
Smith & Sons, Ltd.—
Doctor's Watch ... iii
Strand Half Chronometer ... iii

BOTTLE MERCHANTS:—
Isaacs ... ii
Islington Glass Bottle Company ... ii
Kilner Brothers, Ltd. ... ii

CARRIAGES, HORSES, &c.:—
Armstrong—
Coachmen's and Grooms' Liveries ii
Cortland Wagon Co.—
Secondhand Carriages ... ii
De Dion-Bouton, Ltd.—
Motor Carriages ... ii
Gibbs—Hooded Buggy ... ii
Marston—Brougham Hansom ... ii
No. 353, L.O., Strand—
Doctor's Light Victoria ... ii
94, John Ambulance—
Invalid Carriage ... ii
97, George-street, Portman-square—
Secondhand Carriages ... ii

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Castor Oil ... iii
Cantral Leaf ... iii
Bynin Amara ... iii
Byrnol ... iii
Vaporized Creosotes ... iii
Antitoxins ... iii
Bayer Co.—
Pharmaceutical Preparations ... iv
Benger's Food, Ltd.—
Liquor Pepticus ... iv
Essence of Rennets ... iv
Brady & Martin—
Pinoleum ... iii
Brin's Oxygen Co.—Brin's Oxygen ... iii
British Druggists—
Hopogan ... iii
Matogan ... iii
Bullock & Co.—
Pepsina Porci ... iii
Acid Glycerine of Pepsine ... iii
Burgoyne, Burbidges & Co.—
Ducsal ... iii
Salacreol ... iii
Burroughs, Wellcome & Co.—
Medical Equipments ... iii
Soloist Products ... iv
Kepler Malt Products ... iii
Tabloid Trade Mark ... iii
" Glycerophosphates ... iii

CHEMISTS—(Continued). PAGE
Carney & Co.—
Glyco-Thymoline ... iv
Glyco-Heroin ... iii
Dhongas ... iii
Cox & Co.—
Pills and Tablets ... iii
Cude & Co.—
Linctus Heroin Co. ... iii
Capsule Ethereal ... iii
Hewlett & Sons—
Liq. Santal Flav. c. Buchu et Cubeba ... iii
Hudson—Bismuthol Jujubes ... iv
Kirby & Co.—
Glycocoin ... iii
Knoll & Co.—
Fine Alkaloids ... iii
Special Products ... iii
Krocchyle Co.—
Barff Soro Glycerine ... iii
Macfarlan & Co.—
Chloroform ... iii
Anæsthetic Ether ... iii
Maltine Manufacturing Co.—
Maltine with Cod Liver Oil ... iii
Newbery & Sons—
Iagiavin ... iii
Bromo Soda ... iii
Parke, Davis & Co.—
Standardisation of Drugs ... iii
Salmon & Co.—
Slinger's Nutrient Suppositories ... iii
Sanatogen Co.—Sanatogen ... iii
Savory & Moore—
Pancreatic Emulsine ... iii
Schimmel & Co.—Fellantin ... iii
Scott & Bowne—
Scott's Emulsion ... iv
Serravallo's Tonic ... iii
Squire & Sons—
Glycero-Phosph. Co. ... iii
Glycocoal with Malt ... iii
" " Medulla Rubra ... iii
" " Hæmoglobin ... iii
Vinolia Co., Ltd.—
Vinolia Household Soaps ... iii
Willcox, Francis, Butler & Thompson—
Mist. Bismuthi Comp. ... iii
Mist. Cerii Comp. ... iii
Zimmermann, A. & M.—
Schering's Preparations ... iii

EMBALMERS:—
Pearce ... ii

FOODS:—
Allen & Hanburys—
Allenburys Milk Foods ... iii
" Malted Foods ... iii
Armour & Co.—
Glycerine Extract of Red Bone Marrow ... iii
Aylesbury Dairy Co.—
Humanised Milk ... iii
Blatchley's Diabetic Preparations ... iii
Bovril (Limited)—Invalid Bovril ... iii
Cadbury's Cocoa ... iii
Callard & Co.—
New Diabetic Foods ... iii
Carnrick & Co.—
Liquid Peptonoids ... iii
Coleman & Co.—
Wincarnis ... iii
Crosse & Blackwell—
M.D. Marmalade ... iii
International Pharmacal Co.—
Plasmon ... ii
Lemco—Lemco Cookery Book ... iii
Nicolay & Co.—
Hæmalogen ... iii

FOODS—(Continued). PAGE
Ono ... iii
Protene Foods ... iii
Tibbles' Vi-Cocoa, Ltd.—Vi-Cocoa ... iii
Van Abbott & Sons—
Foods for Diabetics and Obesity ... iii
Welford & Sons—
Sanitary Milk Supply ... iii

FURNITURE &c.:—
Army and Navy House Furnishing Co. ii
Carter—Invalid Furniture ... ii
Wincycle Trading Co., Ltd.—
Bromider Adjustable Table ... iii

MED. & SURG. APPLIANCES:—
Bailey & Sons—
Consulting-room Couches ... iv
Bulling's System of Inhalation ... iv
Burroughs, Wellcome & Co.—
Aseptic Hypodermic Syringe ... iii
Cocking—
Poro-Plastic Jackets and Splints ... iv
Cox—X-Ray Shield ... iv
Dowsing Radiant Heat Co.—
Dowsing Radiant Heat and Light Treatment ... ii
Evans & Wormull—
Improved Locker ... iv
Hoefticke Limited—
Hoefticke's Appliance ... ii
Holland—Instep Arch Sock ... iii
Huxley—
Spiral Abdominal Belts ... ii
Krohne & Sesemann—Bandages ... iii
Marconi's Wireless Telegraph Co.—
Induction Coils ... iii
May, Roberts & Co.—
Absorbent Tissue ... iii
Cotton Wools ... iii
Gamgee Tissue ... iii
Lints ... iii
Waterproof Sheetings ... iii
Millikin & Lawley—Otology, &c. ... iv
Pond—Arch Support Socks ... iv
Pope & Plante—
Elastic Stockings ... iv
Abdominal Supporting Belts ... iv
Robinson & Sons—Gamgee Tissue ... iv
Seabury & Johnson—
Woven Elastic Bandages ... iii
Plaster-of-Paris Bandages ... iii
Aseptic Ligatures ... iii
Sykes, Josephine & Co.—
Corsets and Belts ... iii
Watson & Sons—
High Frequency Apparatus ... ii
Wood—Vinolo ... ii

MINERAL WATERS:—
Bacalap Bitter Water Co.—Bacalap ... iii
Apollinaris Co.—Apenta ... iv
Canwai, Ltd.—Canwai ... iv
Contrexeville Pavilion ... iv
Davis—Tarsap Water ... iii
Hogg & Son—Piperazine Water ... iii
Ingram & Royle—
Evian Source Cachat ... iii
Salutaris Water Co.—
Salutaris Water ... iii
Vilmontaine ... iv
Voigt, Bartels & Co.—
Wiesbaden Gout-Water ... iii

PRINTERS & ENGRAVERS:—
Cooke & Co.—
Brass Name Plates and Lamps ... ii
Outleton—
Brass Door Plates ... iv
Heraldry, &c. ... iv

SANITARY APPLIANCES, &c.:—
British Lysoform Co., Ltd.—
Lysoform ... iv
Joyce' Sanitary Compounds Co.—
Cyllin ... iii
Newton, Chambers & Co.—Izal ... iii
Southall Bros. & Barclay—
Accouchement Sets ... ii
" Sheets, &c. ... ii

STATIONERY, &c.:—
John Heath & Co.—Pens ... iii

TAILORS, BOOTMAKERS, &c.:—
Dowie & Marshall—Boots ... ii
Emerson Shoe Store—
Emerson Boot ... iii
Evans & Co.—
Frock Coat ... iii
Hamilton & Co.—
Khaki Drill Suit ... iv
Doctor's Fur-lined Overcoat ... ii

TOBACCO, CIGARS, &c.:—
Andrenio & Co.—
Marsuma Cigars ... iv
" Cigarettes ... iv
" Smoking Mixture ... iv

TYPEWRITING, &c.:—
Cambridge Typewriting Agency, Adolphi ... iv
Taylor's Typewriters Co.—
Typewriters ... iv

VACCINE LYMPH:—
Hime—Glycerinated Calf Vaccine ... iv
Jenner—Institute for Calf Lymph ... iv
Rebman—
Glycerinated Pure Calf Lymph ... iv
Renner's Calf Lymph Establishment ... iv
Wyleys, Ltd.—Calf Lymph ... iv

WINES, BEER, SPIRITS, &c.:—
Buck & Co.—
"G B" Diabetic Whisky ... iv
Brown & Pank—
Fine Vintage Brandy ... iv
Gautier's Liqueur Brandy ... iv
Mackenzie & Co.—
Pure Highland Malt Whisky ... iv
Marnell's Three Star Brandy ... iv
Simpson & Co.—Scotch Whisky ... iv
Sykes & Co.—Sparkling Saumur ... iv
Tanqueray, Gordon & Co.—
Dry London Gin ... iv
The Orion South Australian Wines ... iv

MISCELLANEOUS:—
A. L., Grayshott-road—
Cook-Housekeeper ... iv
Author—Medical Man required ... iv
Best & Son's Laundries ... iv
Canton Publishing Co.—
Representatives wanted ... iv
Foot—Typewriting ... iv
Lawn & Farlow—The Gunsafe ... iv
M'Caw, Stephenson, & Orr—
Securities ... iv
No. 245, L.O., Strand—
Surgeon's P. & O. Outfit ... iv
No. 248, L.O., Strand—
Agencies wanted ... iv
No. 261, L.O., Strand—
Secretarial Work ... iv
U.—High Frequency Installation ... iv
Robinson & Fisher—
Furniture ... iv
Surgical, Weald-road—
Resection Instruments ... iv

EVERY FRIDAY.

THE LANCET.

PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, *accompanied by a remittance.*

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only hould be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

ADVERTISING.

Books and Publications	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto.	0 5 0
Trade and Miscellaneous Advertisements and Situations Vacant	Ditto.	0 4 6
	Every additional line	0 0 6

Situations Wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

OFFICES: 423 AND 424, STRAND, LONDON, W.C.; AND 1, 2, AND 3, BEDFORD STREET, ADJOINING.

A Clinical Lecture
ON
RICHTER'S HERNIA.

Delivered at St. Mary's Hospital on Dec. 15th, 1904.

BY V. WARREN LOW, M.D., B.S. LOND., F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AT THE HOSPITAL.

GENTLEMEN,—I have lately had under my care in the wards of this hospital four cases of the condition known as Richter's hernia. This affection differs somewhat in its course and symptoms from the ordinary cases of strangulated hernia and its diagnosis is not always an easy matter. For this reason it is constantly overlooked in its earlier stages and in consequence its mortality is high. I am also inclined to believe that it is not so rare a condition as was previously thought, as there have been several other cases in the hospital within the last year, in addition to the four under my care. Nearly 20 years ago a certain amount of controversy waged over the name that should be given to this variety of hernia. Mr. Treves in an exhaustive paper read before the Royal Medical and Chirurgical Society in 1886[1] suggested that these partial herniæ should be called after Richter who had published a book on Hernia in 1778 (dedicated, by the way, to George III.), in which there was a chapter on what he called small herniæ, amongst which were included these partial herniæ. Mr. Treves pointed out that Littré in 1700 had described a variety of hernia in which a diverticulum, evidently that diverticulum now known as Meckel's, escaped into a hernial sac; but it was obvious that Littré had not contemplated the variety of hernia now under consideration. At the time of Treves's paper exception was taken to the suggested nomenclature on the very excellent grounds that it was inconvenient to associate the name of an individual with a pathological condition and the somewhat clumsy title of "partial enterocele" was suggested instead. Time has, however, practically decided the question and it would, I think, be as difficult to avoid the term Richter's hernia as it would be to escape from a "Bell's palsy" or a pair of "Spencer Wells's forceps."

Treves's paper still remains the best summary of the facts in connexion with this condition. It is, as you all probably know, a strangulation of part only of the circumference of the gut wall, the area involved varying from a quarter, or even less, up to two-thirds or three-quarters of the circumference. It will be evident that in those cases where the larger proportion of the wall is involved the remainder of the lumen will, in all probability, be occluded by the kinking of the coil of intestine. The main facts recorded by Treves, as the result of a careful study of 53 cases, are that it is almost invariably the small intestine which is involved, generally the ileum, and that the area of gut wall strangulated is that opposite the mesenteric border. It occurs more frequently in women and in femoral herniæ; it only occurs in adults and, curiously, is more common on the right side. All four of my cases were women with right-sided femoral herniæ. The symptoms at first tend to assume a milder character than in the ordinary case of a strangulated hernia. The vomiting is less severe and less frequent, often of late onset, and rarely feculent. The bowels may be opened during the whole process of strangulation or may act occasionally and will often respond to aperients. Persistent diarrhœa has been known to exist throughout. The hernial protrusion may often escape notice and partly owing to this fact gangrene of the strangulated area is common (27 out of 53 cases collected by Treves). The mortality is therefore high. It is interesting to note, however, that cases of spontaneous cure occasionally occur with the formation of a fæcal fistula which afterwards closes of itself. The first two of these cases were published in THE LANCET of Sept. 24th, 1904, p. 895, and I will only here give a brief *résumé* of the chief points of interest.

CASE 1.—A woman, aged 30 years, was admitted to St. Mary's Hospital on Feb. 3rd, 1904. She had had a small lump in her right groin since Jan. 30th; this lump had appeared in the previous September and had then been regarded as an inflamed crural gland. It had disappeared under local treatment and there had been neither vomiting nor constipation. During the attack for which she was admitted there had been vomiting and her bowels had not been opened for three days before her arrival at the hospital. On admission she appeared ill but was not collapsed. Her temperature was normal, her pulse was 96, and her respirations were 18. There was a small tender swelling in the position of a right femoral hernia over which the skin was reddened and œdematous. There was slight distension of the abdomen but the abdominal walls were mobile and flaccid and there was only the slightest degree of tenderness. Operation showed that the hernial sac only contained pus and fæces and that the bowel had slipped back into the abdominal cavity. There was general peritonitis present, the peritoneal cavity containing fluid fæces. Near the internal opening of the femoral canal lay a coil of lower ileum of which a portion of the circumference, two-thirds, had been nipped to form a Richter's hernia. The herniated portion was gangrenous and had perforated in two places. Through a middle-line incision this coil of intestine was excised and Paul's tubes were tied into the patent ends of the intestinal canal. The patient, however, sank and died 20 hours afterwards.

CASE 2.—A woman, aged 41 years, was admitted to St. Mary's Hospital on March 5th, 1904. She had noticed a sudden pain and swelling in the right groin on Feb. 25th; she vomited at the onset of the pain. She continued to get about the house for four days before she took to her bed and was not admitted to hospital till the eighth day of her illness. Her bowels had not been opened during this period in spite of enemata and for the last four days there had been persistent vomiting. On admission her pulse was 120, her respirations were 28, and her temperature was 97° F. There was no marked evidence of collapse and the woman was cheerful. The abdominal walls were flaccid and not in the least degree tender. In the position of a right femoral hernia was a small tender swelling over which the skin was slightly reddened and œdematous. On incising this purulent fluid escaped from an empty hernial sac. Median laparotomy showed general purulent peritonitis but no fluid fæces were present in the peritoneal cavity as in the last case. A coil of lower ileum was found, of which roughly half the circumference had been strangulated, the strangulated portion still retaining the shape in which it had occupied the hernial sac. No obvious perforation was demonstrable but the herniated portion was covered with thick yellow recent lymph. The coil containing the herniated portion was fixed on the abdominal wall outside the peritoneal cavity and the latter was well flushed and drained. On the 9th the coil, which had then recovered its normal shape, was replaced in the abdominal cavity and the woman made an uneventful recovery.

In my remarks on these cases I pointed out, among other features of similarity, the insidious nature of their onset. In the first one it was only on the fourth day of the illness that the case was considered sufficiently serious to require operation, while in the second the woman got about her house for four days of her illness and it was not until the eighth day that she was brought to hospital. I would also draw your attention in the first case to the fact that in the previous September a similar attack to that for which she came to hospital was ascribed by a competent observer to inflammation of a crural gland.

CASE 3.—A woman, aged 56 years, was admitted to St. Mary's Hospital on July 30th, 1904, for "intestinal obstruction." She stated that for eight months she had suffered from some vague intestinal disturbance characterised by occasional colicky pains and flatulence with nausea. Her bowels had been irregular in their action but she said that she had not before been definitely "obstructed"; she had never passed blood in her motions. During the last year she had lost flesh considerably. The history of the attack for which she was admitted was that a week previously she had been seized with abdominal pain and sickness and that these symptoms had gradually increased in severity. It was stated that before admission the vomiting had been stercoraceous in character. Her bowels had not been opened since the onset of the attack but there was not absolute obstruction and she had passed flatus up to the time of her admission. She was a spare woman who had evidently lost flesh, her tongue was dry and brown, and her breath was foul. Her

[1] Transactions of the Royal Medical and Chirurgical Society, 1886.

temperature was 98° F., her pulse was 120, and her respirations were 28. The abdomen was somewhat distended generally, and through the thin abdominal walls could easily be seen the movements of the distended coils of intestine. No hernia could be found in any of the ordinary situations and rectal and vaginal examinations revealed nothing. The case therefore presented all the appearances of a case of chronic intestinal obstruction which had become acute and in strong support of this view was the evidence of hypertrophy of the muscle of the intestinal wall, a condition almost invariably associated only with chronic obstruction. The case appeared to me to be probably one of a cancerous stricture of some part of the intestine, possibly in the region of the cæcum or ascending colon. It was with this possibility in view that the abdomen was opened. On exposing the intestines the hypertrophy of the muscular coats was confirmed, the distended and thickened coils of small intestine presenting all the appearances seen in an old case of stricture. The cæcum was found to be collapsed, as were also some 12 inches or so of the lower part of the ileum. On tracing this up a knuckle of ileum was found to be fixed to the abdominal parietes immediately internal to the right external iliac artery. In the course of the manipulations required to expose this more fully the coil became disengaged and it was then seen that a portion of its circumference had been nipped in the femoral ring. The strangulated area was in good condition and immediately on its becoming free gas and intestinal contents began to pass on to the cæcum. During the operation and while the hernia was in position the right inguinal and femoral rings were examined externally but no evidences of a hernia were obtained. The abdomen was closed and the patient, who had not apparently suffered any ill-effects from the operation, was returned to bed. Her bowels were freely opened the next day and the abdominal distension gradually disappeared. The after-history of this patient is of great interest; she continued to do well, with the exception perhaps of slight diarrhœa, till about August 14th—that is to say, a fortnight after the operation—when she complained of abdominal pain and distension. There was still slight diarrhœa. On the 16th she vomited and the pain increased. The woman was now obviously very ill, with cold extremities, her face was pale and drawn, her temperature was 96°, and her pulse was 102. There was resistance of the right rectus just above the level of the umbilicus and at this point a tender tumour appeared in the course of the day. The tumour suggested a distended coil of intestine. The condition of collapse persisted in spite of treatment and an anæsthetic or any operative interference would have been certainly fatal. She never rallied and died early the next morning, 18 days after the operation. Her bowels were opened till the end.

Necropsy.—At the post-mortem examination a volvulus of jejunum was found about five feet from the duodenum. The volvulus consisted of about 18 inches of intestine which had twisted on its mesenteric axis. The gut was gangrenous and could not be unravelled without damage to the intestine. There was no perforation of the intestinal wall or general peritonitis. The portion of intestine that had been involved in the hernia was easily recognised, there still being a ring of ecchymosis at the circumference of the strangulated area. The intestinal wall was here otherwise normal.

The diagnosis in this case presented many difficulties and I do not see how we could have come to any other conclusion than that the case was one of chronic obstruction. The history of indefinite colic for some months, the loss of flesh, and above all the hypertrophied coils of intestine, pointed to a cause of obstruction that had been present for some time, and I am yet at a loss to find a satisfactory explanation of the case. The subsequent course, with the formation of a volvulus while she was lying in bed, pointed to some grave irregularity of the normal intestinal movements and leads one to speculate whether the previous attacks of colic may not have been due to temporary twists of the intestine that unravelled themselves spontaneously.

CASE 4.—This patient is still in the hospital and, I am glad to say, convalescing. She is a married woman, aged 48 years, and was admitted on Nov. 27th with a strangulated femoral hernia. She stated that she had had a swelling in the right groin, of about the size of a walnut, and never completely reducible for 15 or 16 years, but that this had never caused her any inconvenience. On Nov. 22nd she vomited and the swelling increased in size and became more tense and painful. She went to bed and ice-bags were applied to the swelling but its condition remained the same till her admission, while the vomiting and pain continued. Her bowels were not opened after the 22nd but she passed flatus up to the time of her admission. The woman said that she did not feel very ill nor did she appear to be so; the tongue was moist and only slightly furred. Her pulse was 72, her respirations were 20, and her temperature was 97·5° F. The abdomen was somewhat distended and individual coils of intestine could be seen through the abdominal wall, though not so markedly as in Case 3. In the position of the right femoral ring was a tense, tender swelling, irreducible to slight taxis and with no impulse on coughing. The case presented all the appearances of a strangulated omental hernia. At the operation, which was performed immediately, the hernial sac was found to contain a mass of deeply congested omentum of about the size of a small fist, while under the stalk of this mass was a small smooth swelling of the size of the top of one's thumb which proved to be the strangulated portion of a loop of intestine. After incising the neck of the sac and Gimbernat's ligament the whole loop was drawn down when it was found that about one-third of its circumference had been nipped. The gut was in good condition and was returned, the strangulated omentum was removed, and the operation was completed. The woman has never since had any discomfort and is now practically fit to leave the hospital.

I think that possibly the chief interest of these cases lies in the diagnosis. It may be urged that this is not so much a matter of moment nowadays when the condition of a hernia or the cause of an obstruction is often only determined by an early operation. But while I hold that accuracy of diagnosis is as important now for treatment as it ever was, in this particular instance, it must be remembered that you will often have to deal with these cases in circumstances where there may not be the same facilities for an early or merely exploratory operation, as we find in hospital. In such a case valuable time would be lost if the exact nature of the condition were not thoroughly appreciated.

The first and last of these patients illustrate two of the chief difficulties with regard to determining accurately the nature of these cases. In the first patient a previous attack had been diagnosed as an inflamed gland and in the earlier stages of the final attack the same diagnosis was again made. There is much to be said for such a mistake and the diagnosis is often still further obscured by the fact that in such a case there is often an inflamed femoral gland lying over the hernia. Many of you must have seen a surgeon in considerable doubt whether a small, tense, tender swelling in the groin was an inflamed gland or a small hernia and in such cases the diagnosis is often made on the general condition of the patient. But in the early stages of these partial herniæ the constitutional symptoms may be *nil* and the intestinal obstruction is seldom absolute. On the other hand, with an inflamed tender gland there may be sickness and constipation and it has happened to me to cut down on a small inguinal gland in a girl who was vomiting and was also constipated under the mistaken impression that I was dealing with a small strangulated hernia. I need scarcely say, however, that this is a small matter as compared with the reverse mistake of leaving a strangulated hernia unoperated upon.

In the last case another difficulty presented itself. Here there was no question about the hernia, but the fact that six days after the swelling had became larger and more tense the woman had none of the appearances of a case of strangulated hernia might have led a medical man in attendance to believe that he was dealing with a case of an inflamed sac or, possibly, obstructed hernia; and I think that this case emphasises the importance of cutting down on any hernia that has become suddenly larger and is irreducible without any regard to the absence of constitutional symptoms.

In the third case I believe accuracy of diagnosis to have been impossible without an operation as the hernial orifices were examined, both before and while the abdomen was open, and no hernia was discovered. This case was an excellent illustration of the importance of always first examining the hernial orifices from within for bands, &c., in the case of a laparotomy for intestinal obstruction. The examination takes but a few seconds when the abdomen is opened and in this case prevented a long search for a stricture of the intestine which was the diagnosis made before operation.

The question of treatment is usually merely that of any other strangulated hernia. From the first two cases it

would appear that in the event of perforation or gangrene the intestine more often falls back into the abdominal cavity than in cases in which the whole coil is strangulated; consequently the treatment is then complicated by the presence of general peritonitis and what is the best course to pursue in these circumstances must be largely a matter of opinion, based on one's individual experience. As far as mine goes, where suppurative peritonitis is present and there has been complete or partial intestinal obstruction for some days, I do not think that a resection, with immediate suture and the replacement of the newly sutured gut in the abdominal cavity offers the patient such a good chance of life as does the formation of a temporary artificial anus by means of a Paul's tube and a secondary resection, performed after a few days' drainage of the intestinal canal and peritoneal cavity. It would not be right to argue from the success attending resection of intestine in ordinary cases of strangulated hernia as here there is not often general peritonitis, the hernial sac being usually shut off from the general peritoneal cavity. In addition, owing to the acuteness of the symptoms following the strangulation of a complete hernia of intestine, there may not have been intestinal obstruction for more than 48 hours before operation. It is when the strangulation has been of longer duration than this that the mortality begins to be high in cases of resection of gangrenous or doubtful intestine in strangulated herniæ. These cases, therefore, of Richter's hernia, both in regard to diagnosis and treatment, require consideration on lines somewhat different from those laid down for our guidance in cases of strangulated hernia generally and it is for this reason that I have brought this series of cases to your notice.

MYELOPATHIC ALBUMOSURIA.

BY C. W. PAGET MOFFATT, M.A. LOND., M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.

MYELOPATHIC albumosuria is a disease which has hitherto received such scant treatment in medical text-books that I need perhaps offer no apology for introducing the notes of a case, which I have had the opportunity of observing in one of Dr. James Barr's wards in the Liverpool Royal Infirmary, by a concise history and general account of the disorder.

Myelopathic albumosuria, a disease characterised by the presence in the urine of a peculiar proteid body associated with pathological changes in the bone marrow, is a new disease—new, not in the sense of being the product of hitherto non-existent morbid processes, but new by reason of its differentiation by careful clinical observation from other pathological conditions presenting a clinical picture similar in many respects to that of myelopathic albumosuria. Myelopathic albumosuria, a disease to which by different observers many different names have been given (Bence Jones's disease, Kahler's disease, &c.), is a rare disease. I have found in the literature (a summary of which is appended) records of 39 cases. But the number of recorded cases is probably no trustworthy index of the frequency of its occurrence. It is a disease of which the average medical man knows very little, if indeed anything, and there can be no doubt that in many cases it is not diagnosed simply because the existence of such a disease is unknown. With fuller recognition of the disease in the text-books used by students there will probably come a great increase of recorded cases.

Bence Jones[1] was the first to direct attention to this disease. His observations were supplemented by MacIntyre in 1850.[2] The following is a very brief summary of the classical case recorded by Bence Jones.

The patient was a man, aged 45 years. He attributed his illness to a violent effort, accompanied at the time by a sensation as of something giving way in his chest. This sensation returned at intervals and he began to experience pain in the back and lumbar regions. The thorax was tender on percussion but presented no change in shape other than a slight flattening. Accompanying symptoms were: acute attacks of gastritis associated with sharp pain in the right side, diarrhœa, testicular retraction, and frequent micturition, without apparent disease of urethra or bladder. The urine was at times turbid, was acid in reaction, and averaged 40 ounces in the 24 hours. Its specific gravity varied from 1022 to 1040. On heating it became opaque at a temperature varying from 56° to 60° C.; on the addition of nitric acid and boiling it became clear once more. This process could be repeated several times but finally the precipitate became insoluble. The quantity of albumin passed in 24 hours averaged 70 grammes. Post mortem the following condition was found. The thorax was flattened; its muscles were flabby, greyish, and bloodless. The ribs were diminished in volume and weight and were very friable. The medullary substance was red. The sternum was in the same condition. The dorsal and lumbar vertebræ showed similar changes and contained a red gelatiniform medullary substance, a condition described by Dalrymple as "mollities ossium rubra." The pelvic bones were greyish. The long bones were normal.

These observations of Bence Jones and MacIntyre were almost forgotten when attention was once more directed to them by Kühne and Kahler and Huppert. In 1883 Kühne published the results of his examination of a specimen of urine sent to him by a Dutch physician named Stokvis. In this urine he found a body giving the reactions of the Bence Jones albumose. The patient died after a nine months' illness. His disease, which was characterised by deformity of the skeleton, had been diagnosed as osteomalacia but no necropsy was performed. In 1889 Kahler and Huppert[3] published an account of a third case in which a morbid condition of the bones was associated with the presence of Bence Jones albumose in the urine. Again the diagnosis had been osteomalacia but post mortem a multiple round-celled sarcoma of the bone marrow was found. Kahler now identified the associated conditions of morbid changes in the bones and Bence Jones albumose in the urine with the disease described in 1873 by von Rustizky[4] under the name of "Multiples Myelom." Kahler's view has now been confirmed by a large number of recorded cases.

In this country the first to draw attention to the disease, and indeed the first of all observers to diagnose the condition correctly *during life*, was Dr. T. R. Bradshaw, honorary physician to the Liverpool Royal Infirmary. In 1897 there came under Dr. Bradshaw's notice a patient who was passing "milky" urine. Beyond this abnormal condition of his urine the patient was not conscious of there being anything wrong with him. The case, until seen by Dr. Bradshaw, had been regarded as one of chyluria. On examination of the urine Dr. Bradshaw conclusively established the identity of its abnormal constituent with the body first described in 1847 by Bence Jones and subsequently recognised by a few continental observers, who regarded it as an albumose. Dr. Bradshaw confidently anticipated that sooner or later the symptoms due to the condition known as multiple myeloma would make their appearance in the patient in question. This anticipation was amply confirmed both during the lifetime of the patient and at the necropsy. Dr. Bradshaw's communications to the Royal Medical and Chirurgical Society of London[5] were followed by discussions which showed how entirely unknown at this time the disease was to the British medical world. Dr. Bradshaw's was the first case published in England since that of Bence Jones. I may add here that the name myelopathic albumosuria was first given to the disease by Dr. Bradshaw. It appears to be now universally accepted by writers in the English tongue.

I must not omit to mention in this very brief account of the investigation of the disease in this country the name of Dr. F. Parkes Weber, to whose writings on the subject I am greatly indebted. There came under Dr. Parkes Weber's care in 1900 at the German Hospital, London, a patient who was first supposed to be suffering from albumosuria. Dr. Parkes Weber, whose attention had been drawn to the subject by Dr. Bradshaw's writings, soon, however, recognised that the condition was really that known as myelopathic albumosuria. The case ended fatally in December, 1900, and the very full and able account of it, clinical and pathological, published by Dr. Parkes Weber in vol. lxxxvi. of the Transactions of the Royal Medical and Chirurgical Society constitutes one of the most important contributions to the

[1] Philosophical Transactions of the Royal Society, 1848.
[2] Transactions of the Royal Medical and Chirurgical Society, vol. xxxiii.
[3] Prager Medicinische Wochenschrift, vol. xiv., p. 33.
[4] Deutsche Zeitschrift für Chirurgie, vol. iii., p. 162.
[5] Transactions of the Royal Medical and Chirurgical Society, vols. lxxxi. and lxxxii.

study of the disease in question. Dr. Parkes Weber's report contains a brief analysis of all published cases up to date. The account of the microscopical examination of the tumours in Dr. Parkes Weber's case is specially interesting by reason of the curious globules found in the cells, globules which Dr. Parkes Weber supposes may be allied to the "fuchsin bodies" described by Dr. William Russell as "cancer parasites" in an address on a Characteristic Organism of Cancer.[6] I understand that Dr. Parkes Weber is still working at this subject.

Before proceeding to the consideration of the nature of the morbid changes in the bones and the characteristics of the so-called Bence Jones albumose, we must briefly consider the following questions. Does multiple myeloma occur without Bence Jones albumose in the urine? and has Bence Jones albumosuria been found unassociated with the morbid changes in the bones known as multiple myeloma? There seems to be little doubt that multiple myeloma without Bence Jones albumose in the urine does occur. I can only refer here to Parkes Weber's paper[7] on Multiple Myeloma without Albumosuria. On the whole subject of multiple myeloma the following may be consulted: F. W. Zahn,[8] Hammer,[9] Markwald,[10] R. Paltauf,[11] K. Winkler,[12] E. Wieland,[13] M. Borst,[14] and F. Harbitz.[15] Reports, however, of cases of multiple myeloma without Bence Jones albumose in the urine should be received with some caution. When no post mortem was made the evidence is, of course, merely negative and consequently carries but little weight. And when Bence Jones albumose was not looked for it may easily have been missed though present, for even in the absence of serum albumin, seeing that Bence Jones albumose is redissolved on boiling, its presence might quite conceivably escape notice.

Dr. A. J. Hall of Sheffield has very kindly sent me the notes of a case of multiple myeloma of the ribs and vertebræ admitted to the Sheffield Royal Hospital under the care of Dr. D. Burgess on May 14th, 1902. The patient, a male, aged 59 years, presented a typical picture of multiple myeloma but no Bence Jones albumose was found in the urine. There was apparently no albumin in the urine and no Bence Jones albumose was found in spite of the fact that the urine was frequently examined, as Dr. Hall says, by a "competent clinical clerk." The diagnosis during life was, however, osteomalacia, that of multiple myeloma being only made post mortem. For the reason given above I do not consider the evidence in this case as to the absence of Bence Jones albumose quite satisfactory. It is quite certain that not every bone tumour is associated with Bence Jones albumosuria. Naunyn reported in 1900 the case of a patient whose skeleton was riddled with secondary carcinomatous growths without the urine showing any trace of Bence Jones albumose. It is very important to remember in this connexion that in Kühne's case the Bence Jones albumose did not appear in the urine until the illness was well advanced and disappeared three months before death. This is, however, exceptional. In most of the cases the albumosuria was an early and persistent sign. Von Jaksch claims to have observed cases of multiple myeloma with no associated albumosuria.

I have, whilst engaged in writing this paper, found a brief reference to a case of multiple myeloma without albumosuria.[16] The observers are Scheele and Herxheimer. The diagnosis was at first rheumatism. This diagnosis was, however, upset by a spontaneous fracture of the left femur, and post mortem the condition known as multiple myeloma was found. It is definitely stated that there was no albumosuria.

In support of Bence Jones albumosuria unassociated with multiple myeloma the following cases are often quoted:—Dr. Fitz[17] has recorded a case of a woman who died under his care in 1896. The clinical diagnosis was myxœdema, but the Bence Jones albumose was present in the urine. Clinically there was no evidence of bone lesions, but as no post-mortem examination was made such bone lesions cannot be excluded. S. Askanazy[18] has recorded the case of a patient suffering from lymphatic leucocythæmia with associated Bence Jones albumosuria. Post mortem the bones were found to contain a thick gelatinous marrow, of the colour of meat, in which lymphoid cells predominated. There was a hyperplasia of all the lymphatic glands and Askanazy thought that the bone disease was only part of the leucocythæmia. This is, however, by no means demonstrated and I shall return to this point later. Jochmann and Schumm of Hamburg published in 1901 an account of a case diagnosed by them as osteomalacia in which there occurred in the urine Bence Jones albumose. They considered that the post-mortem examination confirmed the diagnosis of osteomalacia. Dr. Bradshaw, however,[19] offered such cogent objections to their conclusions that they revised their verdict and subsequently republished the case as one of multiple myeloma. It is of interest to note that in this case the pelvis and long bones, as well as the ribs and vertebral column, were affected. As bearing on this point the experiments of Dr. G. Zuelzer[20] are of much interest. By the administration of pyrodin by the mouth he made a dog anæmic. On the eighth day of the administration of the drug there was found in the urine a substance giving the typical reactions of Bence Jones albumose and there was no albumin present. This Bence Jones albumosuria continued for four days and then albuminuria occurred and the Bence Jones albumose diminished in quantity. Apparently no examination was made to see what, if any, changes in the bone marrow had occurred.

The cases I have mentioned of alleged Bence Jones albumosuria without multiple myeloma are obviously not convincing and, indeed, all the evidence in favour of such a thesis seems to be very weak. We are justified in concluding (1) that multiple myeloma without even intermittent Bence Jones albumosuria does occur. 2. Save for a few rare and perhaps doubtful cases Bence Jones albumosuria is always associated with disease of the bone marrow. 3. Recorded cases show that the appearance of Bence Jones albumose in the urine is always of fatal import.

It will be convenient to mention here the so-called cases of "peptonuria." It is generally admitted now that the occurrence of true peptonuria is not satisfactorily established and is in any case excessively rare. What has been called peptonuria is really the occurrence of proto- and deutero-albumoses in the urine. Dr. W. D. Halliburton, whilst admitting that destruction of the columnar epithelium of the intestinal wall, by which epithelium peptone is converted into albumin and globulin, might allow the passage of peptone into the blood, states that he has never met with a well-attested case of the kind. The diseases in which digestive albumoses have been found in the urine comprise empyema, lobar pneumonia, disintegrating tuberculous deposits, malignant growths, septicæmia, variola, diphtheria, scarlet fever, measles, enteric fever, typhus fever, malaria, erysipelas, acute rheumatism, acute yellow atrophy of the liver, acute phosphorus poisoning, alcoholic cirrhosis of the liver, venous engorgement of the liver, and involution of the puerperal uterus. But the occurrence of true albumoses in the above diseases is merely fortuitous. In the great majority of cases it is absent. And when these albumoses do occur they are always in very small quantities and in practice are never confounded with the Bence Jones proteid. Their reactions with those of the Bence Jones albumose will be compared later.

The symptomatology of myelopathic albumosuria may be treated very briefly. The symptoms found in every case are pains in the back and sides. There are increasing weakness and anæmia and though there may be temporary remission of the acute symptoms they infallibly recur and progress inevitably to a fatal end. Spontaneous fractures of the ribs have been noted in many cases, as in Dr. Barr's, as also tumours growing from the ribs and deformity of the dorsal and lumbar vertebræ. The abnormal condition of the urine is very unlikely to attract attention until the patient comes under treatment for his other symptoms; but in Dr. Bradshaw's first case (a case of albumosuria in which the

[6] Brit. Med. Jour., Dec. 13th, 1890, p. 1356.
[7] Transactions of the Pathological Society of London, vol. xlviii.
[8] Deutsche Zeitschrift für Chirurgie, 1885, vol. xxii., p. 1.
[9] Virchow's Archiv, vol. xxxvii., p. 280.
[10] Ibid., vol. cxii., p. 122.
[11] Ergebnisse der Allgemeinen Pathologie, edited by Lubarsch and Ostertag, 1896, vol. i., pp. 676-79.
[12] Virchow's Archiv, vol. clxi., p. 252.
[13] Ibid., vol. clxvi., p. 103.
[14] Die Lehre von den Geschwülsten, 1902, vol. i., pp. 492-94.
[15] Norsk Magazin for Laegevidens Kaben, Christiania, 1903, Nos. 1 and 2.
[16] Zeitschrift für Klinische Medicin, vol. liv., p. 57, 1904.
[17] The Significance of Albumosuria in Medical Practice, American Journal of the Medical Sciences, 1898, vol. cxvi., p. 30.
[18] Ueber die Diagnostische Bedeutung der Ausscheidung des Bence-Jones-schen Körpers durch den Harn, Deutsches Archiv für Klinische Medicin, 1900, vol. lxviii., p. 34.
[19] Münchener Medicinische Wochenschrift, Feb. 4th, 1902.
[20] Ueber Experimentelle Bence Jones'sche Albumosuria, Berliner Klinische Wochenschrift, 1900, No. 40, p. 894.

albumose was spontaneously precipitated)[21] the patient was led to consult a medical man because he noticed that his urine was turbid.

Of the etiology of the disease nothing is known. It has been met with more often in males than in females and in most of the cases its incidence is in the second half of life. Of two cases seen by Dr. Bradshaw one had a gumma of the tongue and another gave a history of syphilis. There is, however, absolutely no reason, so far, for connecting the two diseases.

The prognosis is utterly bad. In very few of the recorded cases was life prolonged for more than a year after the onset of such symptoms as led the patient to consult a medical man. In Kahler's cases some symptoms are said to have been present eight years before death. Death may be due to exhaustion or to some intercurrent disorder, of which pneumonia seems to be the most frequent.

Treatment there is none. Various drugs have been exhibited without apparently influencing the course of the disease in the slightest degree.

Experience shows that in the differential diagnosis of myelopathic albumosuria the following diseases must be considered: (1) osteomalacia; (2) muscular rheumatism, lumbago, sciatica, &c.; (3) spondylitis deformans; (4) caries of the spinal column; (5) invasion of the vertebral column and other bones by secondary malignant tumours; (6) pernicious anæmia or other diseases associated with progressive cachexia; (7) nephritis; and (8) chyluria (as in Dr. Bradshaw's first case). It will, perhaps, not be considered necessary to enter here into any detailed discussion of the differential diagnosis.

Pathological anatomy.—The pathological changes are practically confined to the skeleton. Of the bones, the ribs, the sternum, and the vertebral bodies appear to be always affected. Sometimes changes have been found in the pelvic bones and the skull. The long bones have only in a few cases been found diseased (see appended list of cases, Table I.). The new growth is gelatinous, soft, and vascular. It may be confined to the interior of the bone or may (as in the case I have seen) burst through the compact tissue and form tumours of considerable size. Microscopically it is composed chiefly of round cells with little or no intercellular substance. Fat globules are often present in the cells and occasionally cells of a higher type are met with; thus spindle cells may be noticed here and there, and in one case islets of cartilage are stated to have been present. In structure and clinical progress the growth seems to be allied closely to sarcoma, but it differs from the common forms of sarcoma "in its invasion of several parts of the skeleton simultaneously, and in its showing no tendency to form metastases in other parts or organs" (Bradshaw). Von Rustizky regarded the growths as a simple hypertrophy of the bone marrow.

Professor R. Muir of Glasgow, reporting on sections of a case recorded by Dr. Parkes Weber, says: "I accordingly consider that the tumour is formed by a special and characteristic type of cell, which is probably derived either from the neutrophile myelocyte or its predecessor; that this cell produces in its protoplasm in a granular form a substance which is closely allied to, though not quite identical with, the substance of the neutrophile granules; and that this substance is formed in excess, and may form larger granules by confluence of the smaller; the large globules sometimes becoming free." This observation of granules and globules constituting a characteristic feature of the tumour cells has not yet been confirmed by other observers. Dr. J. H. Wright,[22] reporting on a case examined by him, says that the principal tumour cells appeared to be a variety of Unna's plasma cells. Dr. Parkes Weber found in a case treated by him in 1896 that not only bones but lymphatic glands too were affected by the new growth. In this case no albumose was found; it was not necessarily a case of myelopathic albumosuria. He came to the conclusion that the growth in the glands and bones was identical and consisted of cells resembling lymphocytes, except that very many of them had more protoplasm than ordinary small lymphocytes have. Hardly any of these contained granules and those that did he regarded as not being tumour cells at all. The importance of this view in reference to Askanazy's case is obvious. Dr. Parkes Weber therefore divides multiple myelomata into two classes: (1) a growth in which the bone marrow only is concerned; and (2) a growth in which nearly all the cells resemble small or large lymphocytes and are possibly derived from the non-granular predecessors of the myelocytes. In this second type of multiple "myeloma" lymphatic glands as well as bone marrow may probably be affected.

[21] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxi.

[22] Johns Hopkins Hospital Reports, 1900, vol. ix., pp. 359-66.

Urine.—Beyond the presence of the Bence Jones proteid there is no constant peculiarity. In some cases the amount of urine excreted was normal throughout, in some increased, in some diminished. In some cases frequent micturition was noted. As to the amount of the Bence Jones albumose excreted, it varies in the cases in which I have been able to find it recorded from $\frac{1}{10}$th per 1000 to 22 per 1000. It is, of course, not constant throughout the course of any one case. In some cases serum albumin was also said to be present. I append in tabular form the comparative reactions of Bence Jones albumose, serum albumin, and digestive albumoses. In practice what is really important is to distinguish Bence Jones albumose from serum albumin. Both of these bodies give the following reactions: they are coagulated by heat, in faintly acid urine, by mineral acids, by ferrocyanide of potassium and acetic acid, by picric acid, and by mercuro-potassium iodide. It is therefore obvious that Bence Jones albumose may easily, unless the observer bears in mind the possibility of its being present, be overlooked and the presence of serum albumin be incorrectly diagnosed. If, however, the essential differences in the reactions of the two bodies are kept in mind Bence Jones albumose can easily be distinguished from serum albumin by ordinary methods. The most important reactions which serve to differentiate the two bodies are the following:—

1. Bence Jones albumose coagulates at 58° C. or thereabouts, a temperature much lower than that required for the coagulation of serum albumin—viz., about 75° C. The recognition of this low coagulation point is therefore most important and Dr. Bradshaw states that he has never known it to fail. In performing the experiment it is important not to add too much acid, as a slight excess may entirely prevent coagulation.

2. When Bence Jones albumose is thus coagulated at this comparatively low temperature, if the fluid containing it is heated to boiling point the coagulum is partly or wholly dissolved but reappears on cooling. If on boiling the fluid remains turbid the re-solution of a part at least of the coagulum may be demonstrated by filtering and cooling the filtrate, when the albumin will be re-precipitated. This reaction, it must, however, be admitted, is not always obtained. If the albumin is present in large quantities it may be necessary to dilute the urine with water or with normal urine in order to obtain the reaction.

3. The reaction of the body to hydrochloric acid is almost as important as the heat-coagulation reaction. If the albumose is abundant a dense precipitate is obtained on pouring in strong hydrochloric acid. If the albumose is present in small quantity the "ring" or "contact" method should be preferred. Dr. Bradshaw has found that 0·5 part per 1000 will give a definite white ring at the junction of the urine and acid. This test is now known as "Bradshaw's test."

4. Bence Jones albumose is thrown down by strong nitric acid. On heating to boiling point the precipitate is more or less completely redissolved and reappears on cooling. It is this reaction which has caused the body to be classed with the albumoses. The precipitate with hydrochloric acid behaves in a similar manner.

5. Bence Jones albumose is coagulated by ferrocyanide of potassium and acetic acid but, as I have found on experiment, in a way quite different from albumin. With serum albumin coagulation is immediate, whereas in the case of Bence Jones albumose it is slow in appearing and begins as a turbidity which gradually increases in density. It may only appear after the lapse of several hours.

By the above tests Dr. Bradshaw has never failed in identifying the body in the cases which have come under his notice. He does not feel sure, however, that they would work satisfactorily if the albumose were present in quantities much below 0·5 per 1000.

As regards the source of the proteid body called Bence Jones albumose, what is known on the subject may be briefly summed up. There are three hypotheses:—1. That it is derived from the proteid constituents of the food which for some reason fail to undergo normal metabolism. This is the view supported by Magnus Levy. 2. It is produced by some abnormal metabolism taking place in connexion with the new growth in the bones. This might possibly be the

TABLE I.—SHOWING THE RECORDED CASES OF MYELOPATHIC ALBUMOSURIA.

No.	Date and place of publication.	Observer.	Age.	Sex.	Necropsy.	Duration of disease.	Urine.	Morbid anatomy.	Remarks.
1	1848, Philosophical Transactions and (1850) Transactions of the Royal Medical and Chirurgical Society.	Bence Jones and MacIntyre.	45	M.	Yes.	1 year and over.	Bence Jones albumose.	Bones of trunk brittle and filled with red gelatiniform substance.	Kidneys normal
2	1867, Zeitschrift für Biologie.	Kühne.	40	M.	No.	(?)	,,	—	—
3	1889, Prager Medicinische Wochenschrift.	Kahler and Huppert.	46	M.	Yes.	Eight years.	Bence Jones albumose for six years.	Multiple myeloma. Diagnosis was osteomalacia.	—
4	1891, Nederlandsche Tijdschrift voor Geneeskunde.	Stokvis.	—	—	—	—	Bence Jones albumose.	Gelatinous masses in bones. Not examined microscopically.	—
5	1894, Prager Medicinische Wochenschrift, No. 51.	A. Raschkes.	65	F.	Yes.	—	Albuminoids = 1·30 per cent., of which 0·40 = albumose.	Not examined microscopically. New growths in the thorax and pelvis.	Pneumonia.
6	1897, Deutsches Archiv für Klinische Medicin.	Seegelken Stintzing of Vienna.	61	M.	Yes.	—	Bence Jones albumose.	Bone tissue replaced by thin tissue with large spaces and cellular growth.	—
7	1897.	Bogotto.	—	M.	(?)	3 years.	,,	—	—
8	1897, Berliner Klinische Wochenschrift.	Senator and Rosin.	36	F.	Yes.	(?)	,,	"Myelogenous round-celled sarcoma." Kidneys amyloid.	—
9	1897, Wiener Klinische Wochenschrift.	Ewald.	62	M.	Yes.	(?)	,,	One tumour of the size of an apple. Microscope showed myeloma.	—
10	1898, Transactions of the Royal Medical and Chirurgical Society.	Bradshaw.	70	M.	Yes.	1½ years.	,,	Sarcomatous growth diffused through the bones of the trunk.	—
11	1898, American Journal of the Medical Sciences.	Fitz.	53	F.	No.	(?)	,,	—	Myxœdema.
12	1898, Deutsche Medicinische Wochenschrift.	Magnus Levy and Naunyn.	—	M.	No.	(?)	,,	—	—
13	1898, Société Biologique.	Vidal de Périgueux.	44	F.	No.	(?)	Probably Bence Jones albumose.	—	—
14	1899, Deutsches Archiv für Klinische Medicin.	Ellinger.	45	M.	Yes.	1 month.	Bence Jones albumose.	Multiple myeloma.	—
15	1899.	Sternberg.	24	M.	Yes.	18 months.	,,	Neoplasm and deformities of the flat bones.	—
16	1899, Russisches Archiv für Pathologie, Klinische Medicin, and Bacteriologie.	Buchstab and Schaposchnikoff.	42	M.	Yes.	—	,,	Multiple myeloma.	Authors claim this to be the first in which Bence Jones albumose gave rise to correct diagnosis.
17	1900, Deutsches Archiv für Klinische Medicin.	Askanazy.	51	M.	Yes.	—	,,	Bones fractured. Marrow increased, gelatinous, red, like flesh.	Leukæmia present.
18	1900, Journal of the Boston Society of Medical Sciences.	James Wright.	54	M.	Yes.	—	,,	—	History of syphilis. The x rays used in diagnosis.
19	1900, Journal of Pathology and Bacteriology, December.	J. A. Milroy.	—	M.	No.	4 years.	,,	—	—
20	1901, Deutsche Medicinische Wochenschrift	Kalischer.	67	F.	Yes.	(?)	,,	Multiple myeloma. Infiltration of ribs.	—
21	1901, Brit. Med. Jour.	Bradshaw.	51	M.	No.	1½ years.	,,	—	Gradual onset. Sarcomatous tissue.
22	1901, Johns Hopkins Medical Bulletin.	Hamburger.	49	F.	No.	—	,,	—	—
23		,,	50	F.	Yes.	—	,,	Multiple myelomata.	Negress.
24	1901, Liverpool Medico-Chirurgical Journal.	Barr.	52	M.	No.	—	,,	—	Bone deformities during life.
25	1901, Münchener Medicinische Wochenschrift.	Jochmann and Schumm.	36	F.	Yes.	—	,,	Multiple myeloma.	First thought to be osteomalacia.
26	1901.	Rostoski.	—	F.	—	—	,,	—	—
27	1901.	Blair.	64	M.	—	—	,,	—	—
28	1902.	Hymans van den Bergh.	36	M.	Yes.	—	,,	Multiple myeloma.	Crystals of albumose obtained.

TABLE I.—SHOWING THE RECORDED CASES OF MYELOPATHIC ALBUMOSURIA—(*continued*).

No.	Date and place of publication.	Observer.	Age.	Sex.	Necropsy.	Duration of disease.	Urine.	Morbid anatomy.	Remarks.
29	1902, International Clinics.	Vickery.	46	M.	No.	—	Bence Jones albumose.	—	(?)
30	1902, Clinica Medica Italiana, p. 211.	P. Crute.	60	F.	No.	—	,,	—	—
31	1903, THE LANCET, Jan. 10th, p. 93.	Anders and Boston.	32	M.	No.	—	,,	—	—
32			43	M.	—	—	,,	—	—
33			33	M.	—	—	,,	—	—
34	(?)	Boston.	50	F.	—	—	,,	—	—
35	1903, Australian Medical Gazette.	Jos. C. Verco.	63	M.	Yes.	6 years.	,,	Multiple myeloma. One humerus affected.	—
36	1903, Transactions of the Royal Medical and Chirurgical Society.	F. Parkes Weber.	50	M.	Yes.	—	,,	Multiple myeloma.	Gumma on the tongue.
37	1904, THE LANCET, April 16th, p. 1045.	Bruce, Lund, and Whitcombe.	51	F.	Yes.	9 months.	,,	,,	Femur and humerus affected.
38	1905, THE LANCET, Jan. 28th, p. 211.	Barr.	49	M.	Yes.	—	,,	,,	—
39	Not published.	Burgess and Hall.	59	M.	Yes.	9 months.	No albumose found in urine.	,,	Vertebræ, sternum, and ribs affected.

result of a special ferment. 3. It has been suggested that its production results from some loss of function of the bone marrow owing to the destruction of the latter.[22]

As regards the first hypothesis, Magnus Levy[24] states that in the case observed by him the excretion in the urine often attained 36 grammes per day. He calculated that the whole mass of the diseased red marrow could not contain more than 100 grammes. He considered, therefore, that the excreted albumose could not be derived from the bone marrow. But in Dr. Parkes Weber's case no Bence Jones albumose was found in any of the organs, and if it were due to abnormal proteid metabolism it would seem reasonable to find it in places such as the muscles and the liver, where proteid metabolism is most active. Dr. Parkes Weber found also in his case that a considerable alteration of diet maintained for two days had no effect in altering the quantity of proteid excreted in the urine. Dr. Bradshaw found, too, in one of his cases, that meals had little or no influence on the excretion of the proteid in the urine. He found that as much was excreted by night as by day, when the patient was taking meals during the day-time only, and he considered the rate of excretion to be "pretty constant throughout the 24 hours." From experiments (Stokvis) in which Bence Jones albumose was injected into the rectum and also in the veins of dogs and in which it was excreted unchanged by the kidneys it seems probable that once it is free in the blood it appears in the urine.

As regards the second hypothesis, Dr. R. Hutchison and Dr. J. J. R. Macleod made a careful chemical investigation of the bones, blood, and organs of Dr. Parkes Weber's second case. They failed to find in these a body giving exactly the same reaction as those of the Bence Jones proteid in the urine. From the vertebræ and the ends of the femur, however (and in this case practically the whole of the skeleton was more or less involved by the tumour growth), they obtained a proteid giving very similar reactions to Bence Jones albumose and they found that no similar proteid could be obtained by employing similar methods from normal red bone marrow. They argued, therefore, that in this case at least the bone marrow was probably the seat of production of the proteid excreted in the urine. Professor Muir found in the tumour cells of the same case granules which he conjectured might be the progenitors of the Bence Jones albumose. Dr. Bradshaw and Dr. E. E. Glynn, however, made very careful examination of the tumour substance and bone marrow from Dr. Barr's case but entirely failed to find any trace of Bence Jones albumose in them. They failed also to find any trace of a ferment.

I cannot find any record of work done in support of the third hypothesis.

The blood.—Systematic examinations of the blood do not appear to have been made in many cases. Nothing beyond simple anæmia seems to have been established and in no case is it recorded that either myelocytes or nucleated red corpuscles were found.

The kidneys.—In some cases interstitial nephritis has been found. In some the kidneys were normal. The disease does not appear to have any necessary association with pathological changes in the kidneys.

[22] Donetti: Rivista Critica di Clinica Medicina, Florence, Nov. 16th, 1901.

[24] Deutsches Archiv für Klinische Medicin, vol. lviii., p. 276.

DR. BARR'S CASE.

The patient, a man, aged 49 years, married, was admitted in January, 1903, into one of the surgical wards of the Liverpool Royal Infirmary. He stated that about the end of September, 1902, he began to suffer from "a bad back" which he thought to be lumbago or something similar. The pain began in the middle of the back, then extended to his side, and finally all round his body. He was treated for lumbago by his own medical attendant but, though relieved for a time, there was no permanent improvement. At the beginning of December he began to stay at home, lost flesh rapidly, and felt an increasing weakness. He was admitted to the Royal Infirmary on Jan. 10th, 1903.

On admission he gave a history of exceptionally good health, admitting no other illnesses than an ordinary cold. No history of syphilis or gonorrhœa could be obtained. He stated, however, that 23 years ago, in the depth of winter, he and his fellow workmen had been in the habit of warming themselves by leaning their backs against a steam receiver. On one such occasion he felt a sudden severe pain in his back which incapacitated him from walking for two or three days. He remembered, too, having at times suffered some pain in the region of the kidneys. This was all he could remember of pain or sickness. His work, which had been chiefly in copper-rolling mills, had always been of the light labouring order. He had never been subjected to severe strains and had always had a good comfortable home. His appetite up to the present illness had been good. He had never been a great smoker but had chewed tobacco. He had evidently been addicted to alcohol. The family history revealed nothing of interest.

On Jan. 15th he was, at the request of the surgeon, seen by Dr. Barr who dictated the following note: "The patient moves with great difficulty, like one suffering from lumbago, though he can flex his body more freely than usual in this latter disease. The eleventh dorsal vertebra is prominent and the percussion note over it is somewhat impaired and there is tenderness on pressure. There is marked tenderness along the course of the eleventh dorsal nerve. On pressure on the head or buttocks he complains of pain shooting down his spine. There is an ill-defined fulness below the right costal margin and beneath the upper end of the right rectus muscle. A deep breath seems to catch him at the right lower ribs. The knee-jerks are considerably increased, especially the left There is no ankle clonus." On Feb. 23rd he was transferred

to Dr. Barr's ward. His condition was then as follows. He was quite intelligent, his frame was wasted, his expression was listless, and his cheeks were flushed. His temperature was 98° F. There was no jaundice, cyanosis, or dropsy. His hands were pale, clear, and wasted. There were no glandular enlargements, his respiration was normal, and there was no cough. His memory and speech were quite unaffected. The patient was now unable to walk or to sit up in bed. All sensation in the lower limbs was lost, though a smart blow on the skin could be felt. Both knee-jerks were absent, as were also patellar and ankle clonus. The upper limbs were unaffected. Sensation below the level of the iliac crests was lost all round the body. There were no apparent vaso-motor or trophic disturbances, no abnormal flushing, localised pallor, sweating, or joint changes. There were no changes in the nails or the hair. The bladder and rectum reflexes were impaired and urine and fæces were passed involuntarily. The respiratory system was normal. The heart sounds were distant. The pulse was regular in time and force, 100 per minute, of low tension, and poor in volume.

On Feb. 26th a rash of a somewhat punctate red nature appeared all over the body. It was especially marked on the arms and lower extremities. By the 28th the mischief had spread in a marked degree. All reflexes below and including the epigastric had disappeared. There was a complete loss of sensation extending as high as the umbilicus. There were a marked angular curvature of the spine at the level of the eleventh and twelfth dorsal vertebræ and a fracture of the third right rib at the junction with the costal cartilage. A slight swelling could be felt over the manubrium sterni and the bone itself did not feel firm. It appeared also unusually narrow, not being much over one inch in width. The diaphragm moved but there was no movement of the recti abdominis. The vaso-motor disturbance was marked and a measly rash covered the abdomen. The pulse was soft and feeble. The appetite was poor, the bowels were confined, and the motions were offensive. The liver and the spleen appeared to be normal. The urine, which had now to be drawn off, contained three grammes per litre of albumose. On March 9th the pain in the back and the right side had increased. The bladder had to be washed out with boric lotion. On the 13th the patient's temperature was 102·8°, the pulse was 122, and the respirations were 24. Percussion over most of the lower lobe of the left lung gave a dull note. The breathing was deep but not laboured and almost entirely abdominal, the inspiration was harsh, and the expiration was prolonged. The breath had a peculiar sweet odour. The cheeks were flushed and of a slightly purplish hue. On the 14th the temperature, which had been somewhat reduced, was again 102·4°, the respirations were 28, and the pulse was 118. The urine was normal as to chlorides, deficient in phosphates, and contained no acetone or diacetic acid. On the 20th for the last few days the patient had had muscular twitchings, especially marked on passing the catheter. Control of the bladder and the rectum was now completely lost and the urine dribbled away. There was no alteration in sensation. Speech was reduced to a hoarse whisper. The tongue was dry and coated with brown crusts. The temperature was 101°, the pulse was 118, and the respirations were 22. On the 22nd the patient was worse and much troubled with hiccough. This was relieved by cajuput oil and a mustard plaster over the epigastrium. The hoarseness was more marked. On the 24th at 8.30 A.M. the patient seemed to be fairly comfortable and was not complaining. At 8.50 the house physician was called but the patient was dead on arrival. A few minutes previously he had complained of a choking sensation.

Condition of the blood.—An examination of the blood on March 9th gave the following result: xanthocytes, 4,200,000 per cubic millimetre; leucocytes, 7900 per cubic millimetre; and hæmoglobin, 80 per cent. There were no nucleated red corpuscles. The differential count of the white corpuscles

TABLE II.—REACTIONS OF PROTEIDS OCCURRING IN URINE.

—	Heat.	Nitric acid.	Hydrochloric acid.	Potassium ferrocyanide and acetic acid.	Alcohol.	Saturation with NaCl and addition of acetic acid.	Biuret reaction.	Solubility in water.	Saturation with magnesium sulphate.
Serum albumin.	Coagulated about 73° C. Does not redissolve on boiling.	Precipitated. Does not redissolve on boiling.	Coagulated.	Coagulated.	Precipitated and coagulated.	Precipitated.	Violet colour.	Soluble.	Not precipitated.
Serum globulin.	Coagulated (in saline solution). Does not redissolve on boiling.	"	"	"	"	"	"	Insoluble.	Precipitated.
Bence Jones albumose.	Precipitated about 60° C. Redissolves on boiling; reappears on cooling (NaCl must be present and urine must be acid).	Precipitated; partially redissolved on boiling; reappears on cooling.	Ring formed at the junction of the acid and urine diluted 20 times (Bradshaw's reaction).	Very slowly precipitated. The precipitate becomes less distinct on boiling.	Precipitated.	"	"	Soluble in cold alkaline solution.	Slight flocculent precipitate.
Proto-albumose.	Soluble at all temperatures unless salt is present in sufficient quantity to precipitate it.	Precipitated. Redissolves on heating and reappears on cooling.	(?)	Precipitated. Redissolves on warming.	Soluble in 80 per cent. alcohol.	Precipitated. Redissolves on warming.	Red rose colour.	Soluble in hot and cold water and in saline solutions.	Precipitated.
Hetero-albumose.	Precipitated (in NaCl solution) at 65° C. Does not redissolve on boiling. The precipitate is soluble in dilute acid or alkali solution.	"	(?)	"	Precipitated (in neutral solution).	Opacity on heating.	"	Insoluble in hot and cold water. Soluble on addition of salt.	"
Deutero-albumose.	Not precipitated in NaCl solution or on boiling.	Not precipitated unless a considerable amount of salt is added.	(?)	"	"	Precipitated. Redissolves on warming.	"	Soluble in hot and cold water.	Not precipitated.
Peptone	Not precipitated.	Not precipitated.	Not precipitated.	Not precipitated.	Precipitated.	Not precipitated.	"	"	"

Pure Bence Jones albumose dissolved in water is entirely unaffected by heat. The effect of heat on it, when dissolved in urine, is probably due to the presence of uric acid.

was as follows: polynuclear, 82 per cent.; eosinophile polynuclear, 1 per cent.; transitional, 2 per cent.; lymphocytes, 10 per cent.; and large mononuclear, 4 per cent.

The general character of the urine throughout was as follows. About 30 ounces were passed in the 24 hours; it was orange in colour, cloudy and opaque, had a normal odour, and a specific gravity 1022. At first the reaction was acid; afterwards it was alkaline. The deposit consisted of granular casts and later of crystals of triple phosphates. The special albumose found will be discussed more fully. The urine gave the reactions in Table II.

Necropsy.—The post-mortem examination took place 27 hours after death. As regards the sternum, there were no spontaneous fractures. On sawing down the middle several small masses up to the size of a cherry-stone were found. Some were dark purple and others were greyish. The manubrium was hollowed out and contained a dark purplish mass. The sternum was very narrow. On the right side there was a line of fracture running downwards in the anterior axillary line affecting the third to the fifth ribs inclusive. The sixth, seventh, and eighth ribs were fractured in a line more posterior. The ninth, tenth, and

Reproduction of photograph showing tumours in vertebræ and spontaneous fractures of ribs. (The specimen is in the Pathological Museum of Liverpool University.)

twelfth ribs were not fractured. The eleventh rib was fractured one inch from the costal cartilage. In the fourth rib there was a loss of hard substance for about three inches and here there was a spindle-shaped tumour, of half the size of a pullet's egg, projecting into the pleura. On the left side the sixth and tenth ribs were fractured one inch from their heads. All the ribs contained small soft masses of new growth which made them extremely friable. As regards the spinal column, there was marked irregularity of the bodies between the ninth and eleventh dorsal vertebræ accompanied by some twisting, so that the tenth vertebra projected to the right side of the ninth. Some of the bodies had collapsed, so that the cancellous tissue was practically absent. The vertebræ in the lumbar region were softened. The lungs were emphysematous, otherwise they were normal. The heart weighed 12 ounces. The nutrition was good and there was plenty of fat. The valves were somewhat thickened. The left ventricle was somewhat hypertrophied. The right ventricle was normal. The stomach showed signs of early chronic gastritis. The sigmoid flexure was twice the normal size and was distended with fæces. The liver was pale and rather firm. Round the large veins the colour was green, probably owing to the presence of putrefactive organisms. The spleen was rather diffluent. The cortex of the kidneys was diminished in size and studded with yellow patches of the size of a pin's head. The capsules could be readily stripped off. There was some pyelitis. The walls of the bladder were hypertrophied. The mucous membrane was injected and covered with a fleshy material. The ureters were dilated to twice the normal size.

Microscopic examination of the tumours.—I have made sections of the large soft tumour projecting from one of the ribs and also from the tumour growth in the ribs. The tissues were hardened in formalin and imbedded in paraffin. Some have been stained with hæmatoxylin and some with Mann's stain (eosin and methylene blue). The great majority of the tumour cells were of the lymphocyte type. No eosinophile cells were found. Many red blood corpuscles were to be seen in the sections but none of them appeared to be nucleated. There were some large cells containing a considerable amount of protoplasm and a reniform or double nucleus. In the large tumour projecting from the ribs there appeared to be some attempt at the formation of bone. I have not completed the microscopic examination and hope to make a further contribution on the subject.

Bibliography.—Abrikossoff: Virchow's Archiv, Band clxxiii., S. 335 F. Alexander: Zeitschrift für Physiologische Chemie, Band xxv., S. 258. Anders and Boston: THE LANCET, Jan. 10th, 1903, p. 94. Askanazy: Deutsches Archiv für Klinische Medicin, 1900, Band lxviii., S. 34. Barr: Case of Myelopathic Albumosuria, Liverpool Medico-Chirurgical Journal, March, 1901. H. Bence Jones: Philosophical Transactions of the Royal Society, 1848, vol. i., p. 55. Bertoye: Revue de Médecine, April and May, 1904. Blair: Brit. Med. Jour., vol. ii., 1901, p. 713. Boston: American Journal of the Medical Sciences, April, 1903. Bozzolo: Congresso di Medicina, 1897. Bradshaw: Transactions of the Royal Medical and Chirurgical Society, London, 1899, p. 251 (for discussion of this report see Proceedings of the Royal Medical and Chirurgical Society, third series, vol. xi., pp. 72 and 81); On the Evolution of Myelopathic Albumosuria, Brit. Med. Jour., July 13th, 1901; A Case of Albumosuria in which the Albumose was Spontaneously Precipitated, Brit. Med. Jour., Nov. 3rd, 1900; Myelopathische Albumosurie, Münchener Medicinische Wochenschrift, No. 5, 1902; Myelopathic Albumosuria, THE LANCET, Oct. 4th, 1902, p. 929; Discussion on Proteids in Urine, Transactions of the Pathological Society of London. Buchstab and Schaposchnikoff: Russisches Archiv für Pathologie, Klinische Medicin, und Bacteriologie, 1899, Band vii., S. 11 (Russian). Butlin: Transactions of the Pathological Society of London, 1879, vol. xxxi., p. 277. Byrom Bramwell and Noel Paton: Laboratory Reports of the Royal College of Physicians, Edinburgh, 1892, vol. iv., p. 47. Coates: Glasgow Medical Journal, 1891, vol. xxxvi., p. 420. Councilman: Journal of Experimental Medicine, 1898, vol. iii., p. 401. M. Dalrymple: Dublin Quarterly Journal of Medical Science, 1896, p. 85. Ellinger: Deutsches Archiv für Klinische Medicin, 1899, Band lxii., S. 255. Ewald: Wiener Klinische Wochenschrift, 1897, S. 169. Flandrin: Dauphiné Medical, 1900, No. 9. R. H. Fitz: American Journal of the Medical Sciences, 1896, vol. cxvi., p. 30. Flatau: Münchener Medicinische Wochenschrift, Feb. 16th, 1897, S. 175. Girard de Toulouse: Société Biologique, 7 Mai, 1892. Grall: Union Pharmaceutique, 1897, p. 528. Grawitz: Virchow's Archiv, 1879, Band lxxvi., S. 353. Gruzewska: Compte Rendu de l'Académie des Sciences, 1835, p. 128. Gurber: Sitzung der Würzburger Gesellschaft, 1894, Band xxviii. Gutterink and de Groff: Zeitschrift für Physiologische Chemie, 1902, Band xxiv., S. 392. L. P. Hamburger: Johns Hopkins Hospital Bulletin, vol. xii. Hanmer: Virchow's Archiv, 1894, Band cxxxvii., S. 280. Harris: Journal of Medecine, 1896, Annales des Maladies des Organes Génito-Urinaires, 1896, p. 755. Haussmann: Zeitschrift für Physiologische Chemie, Band xxvii., S. 95. Herrich and Hektoen: Medical News, 1894, vol. lxx., p. 339. Hoffmann: Beiträge zur Pathologischen Anatomie, Band xxxv., S. 317. Hoffmeister: Quoted by Milroy, Zeitschrift für Physiologische Chemie, 1898, Band xiv., S. 165. Hopkins and Pinkus: Quoted by Milroy, Zeitschrift für Physiologische Chemie, 1896. Huppert: Zeitschrift für Physiologische Chemie, 1896, Band xxii., S. 500; Neubaur und Vogel's Analyses des Harns, Wiesbaden, 1898, S. 375; also Centralblatt für die Medicinischen Wissenschaften, 1898, No. 28. Hugounenq: Lyon Médical Janvier, 1901, p. 81; Journal de Pharmacie et de Chimie, 1er Mars, 1897; Lyon Médical, 1897, p. 521; Société de Médecine de Lyon, Mars, 1897 et 1902; Chimie Physiologique et Pathologique, p. 526. Iglehart: Associated with Hamburger's case. Jadassohn: Berliner Klinische Wochenschrift, 1893, Band xxx., S. 222. Von Jaksch: Prager Medicinische Wochenschrift, 1892, Band xvii., S. 602. Jacquemet: Dauphiné Médical, No. 7, 1898; Société de Médecine de l'Isère, 5 Juillet, 1898, Décembre, 1900, Mai et Novembre, 1901; Lyon Médical, 1900, p. 268; Dauphiné Médical, 1901, No. 6. Jellinek: Virchow's Archiv, Band clxxvii., S. 96. Jochmann and Schumm: Münchener Medicinische Wochenschrift, 1901, Band xlviii., S. 1340. Justi; Virchow's Archiv, 1897, Band cl., S. 197. Kahler: Prager Medicinische Wochenschrift, 1889, No. 4. S. 5. Kahler and Huppert: Prager Medicinische Wochenschrift, 1889, Band xiv., S. 35. Kalischer: Deutsche Medicinische Wochenschrift, 1901, Band xvii., S. 54. Kander: Archiv für Experimentelle Pathologie und Pharmakologie, Band xx., S. 411. Klebs: Allgemeine Pathologie, 1889, Band ii., S. 675. Krompsecher: Ziegler's Beiträge zur Pathologischen Anatomie, 1900, Band xxvii., S. 431. Kühne: Zeitschrift für Biologie, Band xix., 1883, S. 210. Kühne and Chittenden: Zeitschrift für Biologie, Band xx., S. 11; Maly's Jahresbericht, Band xiv., S. 13. Kühne and Stokvis: Zeitschrift für Biologie, 1883, Band xix., SS. 159, 209; 1884, Band xx., S. 11. Labatut: Société de Médecine de l'Isère, Juin, 1890, Dauphiné Médical, 1899, No. 2 et No. 6. Lilienfeld: Zeitschrift für Physiologische Chemie, Strasburg, 1894, Band xviii., S. 473. Lindemann: Deutsches Archiv für Klinische Medicin, Band lxxxi., S. 114. MacCallum: Journal of Experimental Medicine, vol. vi., No. 1, p. 53. MacIntyre: Transactions of the Royal Medical and Chirurgical Society of London, 1850, vol. xxxiii., p. 211. Magnus Levy: Zeitschrift für Physiologische Chemie, 1900, Band xxx., S. 200. Markwald: Virchow's Archiv, 1895, Band cxli., S. 128. Marschalko: Archiv für Dermatologie und Syphilis, 1895, Band xxx., S. 3. Matthes: Verhandlungen des Congresses für Innere Medicin, Band xix., S. 476; Discussion zum Vertrag von Magnus, Congress für Innere Medicin, 1900. Miescher; De Inflammatione Ossium eorumque Anatomia Generali, 4 to 5 Berolini, 1836. J. A. Milroy: Journal of Pathology and Bacteriology, December, 1900, p. 95. Moraczewski

Zeitschrift für Physiologische Chemie, Band xxi., S. 71, and Band xxv., S. 252. Müller: Deutsches Archiv für Klinische Médicin, 1891, Band xlviii., S. 57. Musy: Société Biologique, 30 Juillet, 1898, p. 875. Naunyn: Deutsche Medicinische Wochenschrift, 1898, Vereins Beilage, S. 217. Neunnister: Lehrbuch der Physiologischen Chemie, Auflage 11, 1897, S. 804. Nothnagel: Festschrift Rudolf Virchow, Berlin, 1891, Band ii., S. 15. Paltauf: Ergebnisse der Allgemeinen Pathologie und Pathologischen Anatomie, herausgegeben von Lubarsch und Ostertag, 1896, Band iii., S. 676. Pappenheim: Zeitschrift für Klinische Medicin, Band xxxix., S. 139. Pauli: Pflüger's Archiv, Band lxxviii., S. 315. Patein: Revue Générale de Clin., 31 Août, 1895. Noël Paton: Report from the Laboratory of the Royal College of Physicians of Edinburgh, 1892, vol. ix. Pich: Zeitschrift für Physiologische Chemie, Band xxiv., S. 246, and Band xxviii., S. 219. Piery: Lyon Médical, 1903, p. 554. Pohl: Archiv für Experimentelle Pathologie und Pharmacie, Band xx., S. 426. A. Raschkes: Prager Medicinische Wochenschrift, 1894, No. 51, S. 649. Ribbert: Centralblatt für Allgemeine Pathologie, Band xv., No. 9, S. 337. Rokitansky: Lehrbuch der Pathologischen Anatomie, 1856, Band ii., S. 132. Rosin (Senator): Berliner Klinische Wochenschrift, 1897, Band xxxiv., S. 1044; also No. 48, and ibid., 1899, Band xxxvi., S. 161. Rostoski: Münchener Medicinische Wochenschrift, 1901, Band xlviii., S. 1115; Deutsche Medicinische Wochenschrift, 1901, S. 224. Runeberg: Deutsches Archiv für Klinische Medicin, Leipsic, 1883. Von Rustizky: Deutsche Zeitschrift für Chirurgie, 1873, Band iii., S. 162. Saltykow: Virchow's Archiv, Band clxxiii., S. 531. Scheele and Herxheimer: Zeitschrift für Klinische Medicin, Band liv. Schultz: Zeitschrift für Physiologische Chemie, Strasburg, 1896, Band xxiv., S. 449. Seegelken: Deutsches Archiv für Klinische Medicin, 1897, Band lviii., S. 126 und S. 276. Senator: Archiv für Pathologische Anatomie, 1874, Band ix., S. 476; also Berliner Klinische Wochenschrift, 1899, Band xxxvi., S. 161. Sicard: Presse Médicale, Octobre, 1901, p. 213. Simon: American Journal of the Medical Sciences, June, 1902, p. 939. Solly: Dublin Quarterly Journal of the Medical Sciences, June, 1846. Spencer: Brit. Med. Jour., Jan. 18th, 1896. Spiro: Zeitschrift für Physiologische Chemie, Band xxxviii., S. 174. Sternberg: Nothnagel's Specialle Pathologie und Therapie, 1899, Band viii., Theil 2, Abtheilung 2, S. 57 und S. 83. Stokvis: Nederlandsche Tijdschrift voor Geneeskunde, 1891, vol. ii., p. 36, cited in Maly's Jahresbericht, 1892, vol. xxi., p. 412. Teissier: Bulletin de la Société Médicale des Hôpitaux de Lyons, 21 Mars, 1902. Thomas: Boston Medical and Surgical Journal, Oct. 3rd, 1901. Unna: Monatschrift für Practische Dermatologie, 1891, Band xii., S. 286. Vickery: International Clinics, 1902. Vidal de Périgueux: Société Biologique, 1898. Virchow: Die Krankhaften Geschwülste Band ii., S. 7, Berlin, 1864. Voit and Salvendi: Münchener Medicinische Wochenschrift, July 19th, 1904. Wladimir de Holstein: La Semaine Méticale, 1898, p. 206; 1899, p. 82. Waldstein: Virchow's Archiv, 1883, Band xci., S. 12. W. B. Warrington: The Morbid Anatomy and Histology of Dr. Bradshaw's Case of Myelopathic Albumosuria, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxii. F. P. Weber: Journal of Pathology and Bacteriology, January, 1898; Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi. Hermann Weber: Transactions of the Pathological Society of London, 1856, vol. xviii., p. 276. Wieland: Primäre Multiple Sarcoma der Knochen, Inaugural Dissertation, Dâle, 1893. Vignard et Gaillavardin: Revue e Chirurgie, 10 Janvier, 1903. Williams: cited by Bradshaw. Winkler: Virchow's Archiv, 1900, Band clxi., S. 252. F. W. Zahn: Deutsche Zeitschrift für Chirurgie, Band xxii., 1885. Zeihnisen (Stokvis): Jahresbericht für Thierchemie, Band xxi., S. 412; Band xxii., S. 525; Band xxiii., S. 577. Zuelzer: Berliner Klinische Wochenschrift, Oct. 1st, 1900, 37 Jahrgang, No. 40. Zung: Zeitschrift für Physiologische Chemie, Band xxviii., S. 132.

Liverpool.

A CASE OF ENCYSTED CEREBRAL ABSCESS.

BY PETER PATERSON, M.B. GLASG., M.R.C.S. ENG.,
ASSISTANT SURGEON TO THE GLASGOW ROYAL INFIRMARY.

THE following case may be of interest as it presents some unusual features.

A girl, aged five years, was admitted into the Glasgow Royal Infirmary on July 28th, 1904, with a history of having had a fit a few hours previously. There had been a slight discharge of pus from the right ear for two years before admission but with this exception she had always been healthy. The fit consisted in irregular jerkings of the face and the limbs together with unconsciousness. The convulsions came on suddenly when she was at play and, so far as could be ascertained, did not begin in any definite order. Nothing suggestive of a rigor had been observed but it is very probable that the seizure took the place of what would have been a rigor in an older subject. When brought under observation the patient was pale and had generalised convulsions, most marked on the right side. When the movements ceased, which they did about half an hour before operation, the limbs were neither in a spastic nor paralysed condition. The eyes showed conjugate deviation to the right; the conjunctival reflex was present and the pupils were equal and fixed. The discs were slightly congested. A red fluctuant swelling was present behind the right ear and pressure on this increased the convulsive movements. The right meatus contained a quantity of fœtid pus and when this had been removed it was seen that the membrane had quite disappeared, its place being occupied by a mass of granulation tissue. The temperature was 102° F., the pulse was 120, and the respirations were 28.

First operation.—Operation was performed an hour after admission, the patient being still unconscious. An incision was made behind the ear when about half an ounce of pus escaped from the abscess in this situation. The mastoid was then seen to be perforated by a small opening in the region of the masto-squamosal suture. The antrum and middle ear were next exposed. These, owing to caries, practically formed one cavity which was filled with granulation tissue. On the granulations being removed the tegmen tympani was found to be eroded with a small perforation at one point. Through this opening a bud of granulations presented. This protrusion was gently pushed aside but no pus escaped. The parts were thoroughly cleaned and packed with a mixture of iodoform and boric acid.

The patient had a quiet night and awoke in the morning conscious and with the temperature 99·4°, the pulse 130, and the respirations 26. Two days later the first sign of paralysis appeared as a paresis of the right side of the face. This disappeared after ten days, by which time also the temperature, the pulse, and the respirations were normal, whilst the condition of the optic discs was stationary. The patient remained in this condition for seven weeks, though an occasional convergent squint was present, and she complained towards the end of a constant pain in the anterior aspect of the right forearm. All the movements of the ocular muscles were normal. During the whole of this time she was clear mentally, answering questions with promptitude and intelligence. Nine weeks after the operation the temperature, the pulse, and the respirations commenced to rise, the temperature running from 1° to 2° above normal. Three days after the beginning of this elevation of temperature she suddenly had another fit of generalised convulsions and at the same time she became unconscious, the insensibility rapidly deepening into coma. During this seizure, and persisting after it had passed off, there was an internal strabismus of the right eye, but apart from this there was nothing in the movements of a localising nature. The conjunctival reflex was absent and the pupils were dilated, fixed, and equal. The temperature ran up to 104·2°, the pulse to 160, and the respirations to 30.

Second operation.—When the granulations in the wound were removed it was found that the bone had been eroded from the tegmen tympani outwards along the roof of the cavity and upwards over the side of the skull to a point one and a quarter inches above the level of the posterior root of the zygoma. The edges of this erosion had a worm-eaten appearance and the bone for some distance round the hiatus was perforated in several places. Through this opening the congested dura mater projected and this on palpation could be felt pulsating. The membranes were incised and a hollow needle was introduced into the cerebral substance. At a depth of three-quarters of an inch from the surface the instrument came into contact with a firm resisting mass. The size of the tumour was ascertained by passing the needle in various directions but steady and fairly strong pressure failed to make it penetrate the substance. A solid tumour, probably tuberculous, with lepto-meningitis was diagnosed and as the mass seemed too large and too deeply situated for removal the patient was put back to bed where she died five hours later.

Necropsy (permission was given to open the head only).—At the post-mortem examination the surface of the brain was found to be dry and somewhat flattened with congestion of the blood-vessels, whilst the base was the seat of a lepto-meningitis. Adhering to the upper surface of the petrous bone was a fluctuant tumour of about the size and shape of a hen's egg. This mass was adhering to the dura mater directly over the tegmen, the point of union not being more than a quarter of an inch in diameter. No opening could be found through which fluid could be pressed from the interior. When an incision was made into the tumour thick creamy pus escaped and nothing was left behind but the dense capsule. The inner surface of this capsule was smooth and polished-looking whilst the outside had a flocculent appearance. The abscess had occupied the temporo-sphenoidal lobe, the cerebral substance surrounding it being much softened. The ventricles were filled with turbid fluid and the right was distorted from pressure of the abscess though a layer of softened brain substance separated them. The vessels of the ventricles were congested. The sigmoid sinus was healthy. Sections of the abscess wall showed an irregular

network of connective tissue with a round-celled exudation and a few tubercles with giant cells. A few blood-vessels were present in the outer part of the wall.

Judging from the thickness and density of the abscess wall it must have been present for a considerable time, probably starting about the onset of the otorrhœa. Striking features in the case were the toughness of the wall of the abscess, as even after it was removed considerable force was necessary before a needle could be made to penetrate it, and also the absence of symptoms referable to the abscess, notwithstanding that the temporo-sphenoidal lobe in which it was situated was destroyed to a very considerable extent. The clinical aspect pointed more to a meningeal infection.

Glasgow.

RESEARCHES INTO THE ETIOLOGY OF CARCINOMA: ON THE PRESENCE OF PLASMODIOPHORÆ IN CARCINOMATOUS TUMOURS AND THE SUCCESSFUL CULTURE OF THE PARASITES.

BY W. FORD ROBERTSON, M.D. EDIN.,
PATHOLOGIST TO THE SCOTTISH ASYLUMS;
AND
HENRY WADE, M.B. EDIN., F.R.C.S. EDIN.,
CONSERVATOR OF THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE researches of which we wish briefly to record some of the results were undertaken specially with a view to testing the validity of the hypothesis that carcinoma is dependent upon the growth of a parasite of the same class as the plasmodiophora brassicæ, which is known to cause tumour growths in various members of the cruciferæ, as well as in other plants. This hypothesis has been strongly advocated in various forms by Behla, Podwyssozki, Roswell Park, Gaylord,[1] and others, but only a certain amount of presumptive evidence has hitherto been obtained in support of it. To most workers at the subject of cancer it has seemed so improbable that they have devoted themselves to entirely different lines of investigation. Our own researches seem to show that it is in accord with fact. We have at least succeeded in demonstrating the presence in carcinomatous tumours of bodies corresponding in form and in reaction to a special method to 14 phases in the developmental cycle of the plasmodiophora brassicæ and in growing from such tumours an organism which accurately represents several successive phases of a parasite of this class.

On the threshold of the inquiry we were confronted with the difficulty, already experienced by other workers, of obtaining a clear view of the plasmodiophora brassicæ in vegetable tumours. The ordinary staining methods were found to be useless for the purpose. We devised special staining processes by which the organism was made to retain certain basic dyes, but we found that when applied to carcinomatous growths they were of little value on account of the depth of the colour imparted to the tissue elements. Nevertheless, by these methods we were able to observe in carcinomata bodies having a very close resemblance to the plasmodiophora brassicæ and we were therefore encouraged to pursue the inquiry further. It occurred to us that in a case of this kind in which ordinary staining methods had failed to yield satisfactory evidence either in support of, or against, the presence of a protozoan organism success might be attained by the employment of metallic processes. The platinum method, as used for the nervous system, was first tried and it proved to be of some utility for the purpose in view. Among the other metallic methods which we tried was one of impregnating tissues with silver, which had been partially worked out for the nervous system some years ago, but which had been abandoned on account of certain practical difficulties it presented. These difficulties were soon overcome and it was found that the method gave a better demonstration of the plasmodiophora brassicæ than any staining processes we had employed. It was also found to be applicable to formalin-hardened tissues from the human subject. It has been chiefly by the use of this silver method and toning of the silvered sections with gold, platinum, and palladium (see appendix) that we have been able to recognise what appear to be the various stages of a plasmodiophora in carcinomatous growths, as well as to identify the organism which has appeared in our cultures.

Plasmodiophora brassicæ.—We have studied this organism as found in the tumours which occur upon the root of the turnip and which are generally referred to in this country as "finger-and-toe disease." In America the condition is commonly known as "club-root" and in Germany as "kohlhernie." The plasmodiophora brassicæ was discovered by Woronin in 1576 and described by him in 1878. At this date he predicted that certain malignant growths in man would eventually prove to be due to a parasite of the same nature. The various stages of the organism have also been described by Nawaschin, De Bary, Gaylord, and others. The several descriptions that have been given do not fully harmonise with each other and a perusal of them leaves the impression that the observers have been unable, owing to the difficulty that there is in staining the organism satisfactorily, to obtain a view of all of the stages through which it passes. With the aid of the ammonio-silver process we have succeeded in tracing most of the various stages of its developmental cycle. We find that this cycle is much more complicated than would appear from existing descriptions. Important stages seem to have passed unobserved. As will be seen, the stages to which we refer are of vital importance for the investigation of the question of the presence of plasmodiophoræ in malignant tumours.

From the descriptions that have been given one gathers that "swarm cells" having entered a root hair of the plant reach the interior of certain of the plant cells; here they proliferate and stimulate the plant cells to divide; after a time several of these amœbæ lying in the protoplasm of a cell coalesce to form a plasmodium in which spores subsequently develop; these spores reach the ground when the plant decays and with the advent of spring develop directly into the amœboid swarm cells, which may once more find their way into the root hairs of a young plant. We have endeavoured to trace the various stages of the parasite not only during its sojourn in the vegetable host but also during its ectogenous existence, which under natural conditions is passed in the ground. We have found that the phenomena of this period can be studied in turnips in which the plasmodiophoræ have reached the spore stage, if the roots are incubated for several weeks at a temperature of from 55° to 60° F.

To follow the various phases of this organism, even when it is well stained, is by no means an easy matter. Normal and degenerative tissue structures and granules complicate the histological pictures and give rise to many difficulties of interpretation. From this cause we have, in one particular at least, already been misled—namely, in regard to the bodies which were interpreted as hyaline spores. We have recently found these bodies in the cells of a perfectly healthy turnip and notwithstanding the readiness with which on first view they seem to fit into the cycle, we are forced to conclude that they have really no place in it. The genuine spore is a nucleated body and the immediately succeeding stage is not granular, as we were led to believe, but the amœboid swarm cell. We have also fallen into error in our former description[2] through not having had an opportunity of examining early vegetable tumours and by having assumed that the life cycle could be completed from the descriptions already given by others. As the granular stage appeared to arise directly from a spore, it seemed legitimate to infer that the amœboid swarm cell described by others represented a later stage. By the use of improved methods of toning the silvered sections we have been able to trace the development of the swarm cells directly from the nucleated spore and to observe that it is from these minute amœboid bodies that the granular stage takes origin. By the study of the earliest examples of kohlhernia that we could obtain[3] we have, we think, succeeded in tracing this stage and the immediately succeeding one on to the nucleated stage. Our description of the life cycle differs from that of others mainly in the recognition of the granular and post-granular stages, without a knowledge

[1] Fourth Annual Report of the work of the Cancer Laboratory of the New York State Board of Health, 1902-03.

[2] See report of demonstration given at the annual meeting of the British Medical Association at Oxford, THE LANCET, August 13th, 1904.

[3] For invaluable assistance in securing these we are indebted to Mr. James Calder of Halterburn, Roxburghshire.

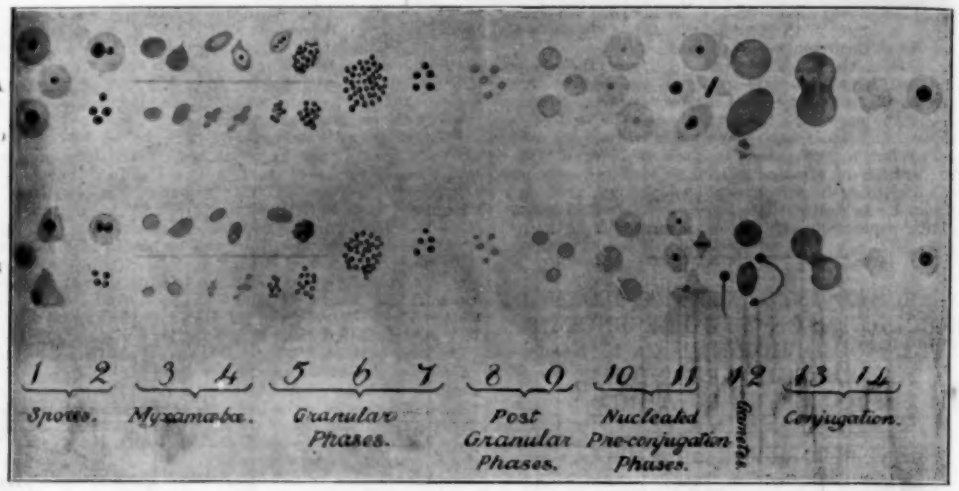


FIG. 1.

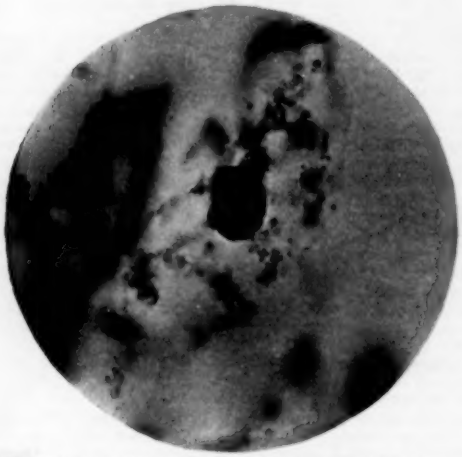


FIG. 2.—Plasmodiophora brassicæ. Early post-granular phase in protoplasm of turnip cell. Palladium-gold toning. (× 1000.)

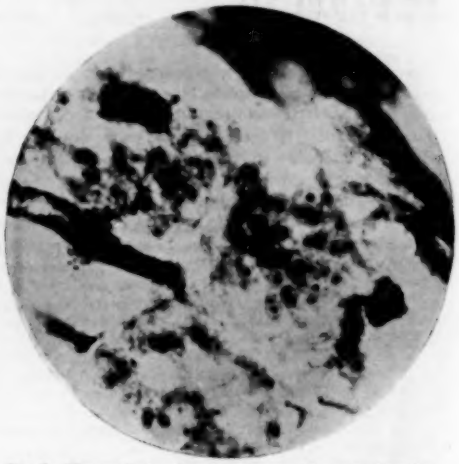


FIG. 3.—Plasmodiophora brassicæ. Nucleated pre-conjugation phase in turnip cell. Platinum method followed by methyl violet. (× 1000.)

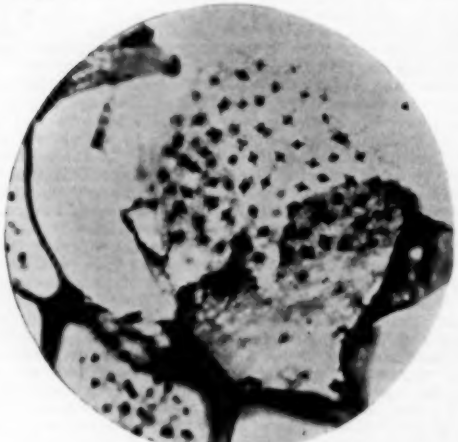


FIG. 4.—Plasmodiophora brassicæ. Nucleated pre-conjugation phase in mitosis. A carbol-fuchsin and carbol-thionin method. (× 1000.)

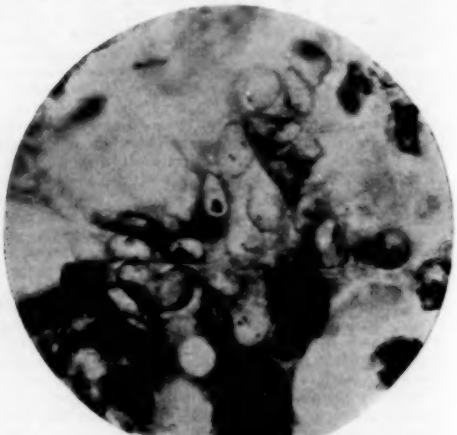


FIG. 5.—Plasmodiophora carcinomatis. Granular stage in nuclei of epithelial cells in a secondarily infected abdominal gland; intestinal carcinoma. Palladium-gold toning. (× 1000.)

FIG. 6.—Plasmodiophora carcinomatis. Post-granular phase in protoplasm of dividing epithelial cell. Mammary carcinoma. Gold toning. (× 1000.)

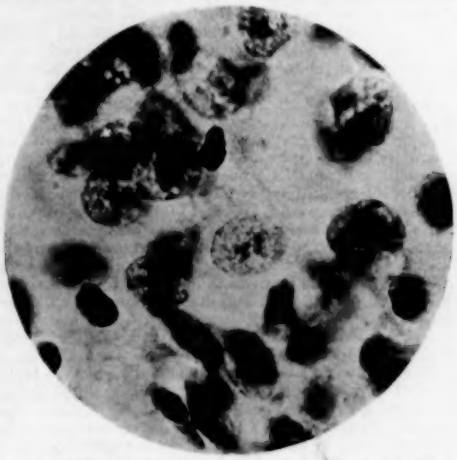


FIG. 7.—Plasmodiophora carcinomatis. Nucleated pre-conjugation phase in nucleus of epithelial cell. Mammary carcinoma. Platinum toning followed by methyl violet method. (× 1000.)

FIG. 8.—Plasmodiophora carcinomatis. Body which may represent a wandering gamete. Small dark body in centre of field with filamentous attachment. Intestinal carcinoma. Palladium-gold toning. (× 1000.)

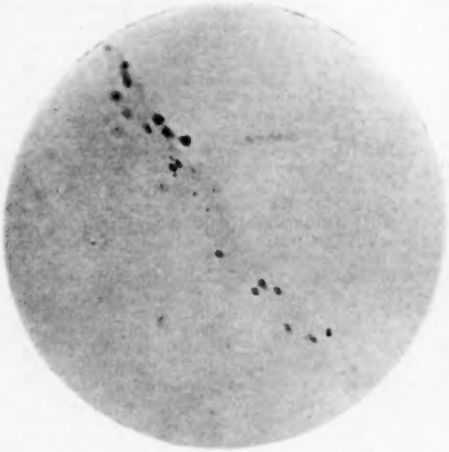


FIG. 9.—Plasmodiophora carcinomatis. Myxamœbæ in section of culture from a case of intestinal carcinoma. Palladium-gold toning. (× 1000.)

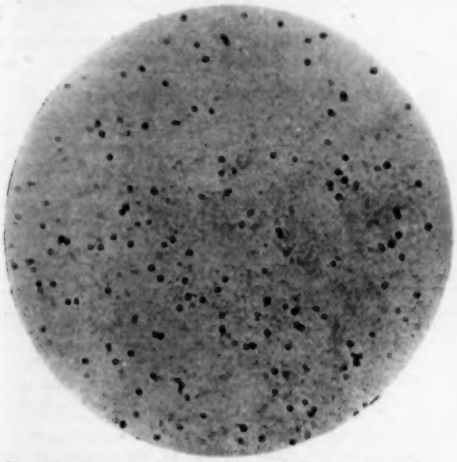


FIG. 10.—Plasmodiophora carcinomatis. Late post-granular phase in section of a culture from a case of intestinal carcinoma. Gold toning. (× 1000.)

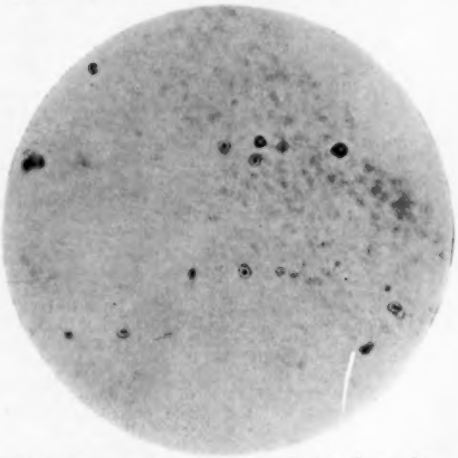


FIG. 11.—Plasmodiophora carcinomatis. Nucleated pre-conjugation phase in culture from a case of intestinal carcinoma. Gold toning following methyl violet. (× 1000.)

of which the question of the relation of carcinoma to plasmodiophoræ would inevitably remain obscure.

We begin with the spore which under natural conditions falls into the ground and lies dormant until early summer. It appears in silver-gold preparations of kohlhernia in turnips as a pale, round body from 1μ to 2·5μ in diameter, having a brown or black granular nucleus, measuring from 0·8μ to 1·4μ (Fig. 1, A 1). When this spore begins to germinate its nucleus undergoes some process of division which it is difficult to trace accurately. It appears to be initiated by the throwing out of a small body from the nucleus. Either two or four small dark bodies are ultimately formed (A 2). The immediately succeeding phase would appear to follow one or other of two courses, probably corresponding to a sexual differentiation. In one mode of development a pale reddish oval or pear-shaped non-nucleated body, from 1·6μ to 2·3μ in diameter, is formed (A 3). Within this there next appears an almost colourless oval central portion with well-defined margin and generally containing a minute dark particle (A 4). Then the clear central portion gradually enlarges and the dark granules within it multiply, whilst at the same time the marginal portion of the cell becomes attenuated (A 5). In the other mode of development the bodies resulting from division of the spore assume an oval form and a reddish, slightly granular appearance (A 3). More darkly stained particles, commonly four in number, soon become visible within them (A 4). There is next a gradual transformation into black granules indistinguishable from those resulting from the first mode of development. There is evidence that, prior to the development of the granules within them, both varieties of these bodies are motile. They very commonly invade the nucleus of the turnip cell and the second variety would appear also to invade the hyaline spheres which form a portion of the cell structure. They may even pass out of the vegetable cell in which they had origin. They are without doubt to be identified with the swarm cells or myxamœbæ described by others. In natural conditions they develop in the earth and having gained entrance to the root-hairs of a young plant travel by way of the vessels to various situations. Both varieties of myxamœbæ become transformed into the granular bodies which represent what we have termed the granular stage of the parasite (A 6). In silver sections toned with palladium and gold these bodies are generally deep black. The smallest of them are no larger than the most minute micrococcus. They are very frequently placed in rows of three and in these instances there is a suggestion of a delicate, unstained, uniting thread, the actual existence of which is, however, uncertain. These granules, which in natural conditions are now lying within the protoplasm of the cell of a young plant, gradually increase in size (A 7). At first they retain their dark appearance but this is gradually lost as they pass into what may be termed the post-granular phase (A 8). They now appear generally as pale reddish, almost homogeneous, round bodies with a sharply defined outline (Fig. 2). The protoplasm of the cell, which is more or less packed with parasites, becomes of a granular and opaque appearance, in consequence of which the outline of the organisms is obscured. The smallest of the parasites have at this stage a diameter of about 0·5μ, whilst the largest (A 9) equal the small forms of the next stage into which they gradually pass. This is the nucleated pre-conjugation stage. The nucleus, which is centrally placed, is at first very pale and difficult to recognise (A 10). The organisms gradually undergo a further increase in size and the nucleus becomes distinct (Fig. 3). At this stage they measure from 1μ to 3·4μ in diameter. They present at least five or six different aspects which as yet it has been impossible to arrange in any series. It seems probable that a sexual differentiation again underlies certain of these differences in appearance. The organism may be round or oval; the nucleus may be relatively large or small and occasionally a distinct nucleolus is present; and, as indicated above, the size of the organism, even when there is reason to believe that the post-granular stage has long been passed, exhibits a considerable range (A 11). There is clear evidence that the organisms divide by mitosis (Fig. 4). There is proof that the morbid proliferation of the vegetable cells is in active progress whilst the parasite is present in the granular stage only and that it may have advanced a considerable way before the nucleated pre-conjugation stage is reached. The next stage is that of the gamete (A 12). The nucleus disappears and the whole organism assumes an opaque, faintly granular aspect. All or most of the parasites in the cell undergo this transformation at the same time. Two adjacent cells then appear simply to fuse to form one (A 13). Simultaneously with this conjugation a distinct capsule forms round the zygote. The new cell has at first a finely granular, opaque appearance. Subsequently it diminishes in volume and becomes rounded in form. A remarkable alteration then occurs in consequence of which the body comes to have the appearance of four (sometimes more) round, pale globules, closely adherent to one another. Surrounded by its delicate capsule the organism has at this stage a very characteristic aspect. Very commonly several adjacent parasites appear to fuse and become enveloped by a common capsule. As, however, the final result is always the same—the formation of the peculiar bodies just described—it seems probable that there is a true fusion of only two individuals. At no stage of the process is there the formation of a multinucleated mass of protoplasm—i.e., a plasmodium. The term plasmodiophora brassicæ would therefore appear to be a misnomer. After a time the organism assumes the form of the nucleated spores already described and the cycle is completed. It will be noticed that in this cycle the large amœbæ figured by Woronin, and described also by others, have no place. It seems probable that what have been regarded as amœbæ were simply aggregations of the granules which arise in the swarm cells. Such aggregations may very commonly be seen within the vessels of the turnip at an early period of infection.

The bodies resembling plasmodiophoræ in carcinomatous tumours.—We have used for the purposes of our investigation chiefly carcinomatous tumours of the breast and malignant adenomata of the intestine (and secondarily affected abdominal glands) removed at operation. As controls we have used simple tumours and various inflammatory tissues, also removed at operation, as well as the tonsil, stomach, liver, and pancreas of the general paralytic and various nervous tissues.

The methods we have employed have been the same as those used for the study of the plasmodiophora brassicæ. It is not, however, to be thought that in these methods we have a means by which plasmodiophoræ can be specifically stained. Although they are capable of rendering such parasites visible they have the disadvantage that they at the same time colour almost everything else contained in the tissues. A partial exception is, however, to be made as regards the combined palladium and gold toning process with which we can claim to have made at least a beginning in the differential staining of certain stages of a plasmodiophora. To a greater or less extent in all the preparations the products of various pathological tissue changes, as well as some normal structures, simulate very closely many of the bodies which there are grounds for believing are plasmodiophoræ. The search for these parasites in carcinomata is therefore beset with difficulties and but for the fact that certain special structural characters can occasionally be recognised it would be impossible to derive any conclusive evidence either in support of, or against, their presence from the histological part of our investigation. There is, of course, room for difference of opinion as to the diagnostic value of any alleged special structural character. We can merely present the evidence as we have found it. The conclusions which it seems to us to warrant when taken in conjunction with that derived from cultures will be considered later.

The bodies in carcinomata, which we believe to be plasmodiophoræ, are considerably smaller than the plasmodiophora brassicæ. Both show a considerable range of size in all their stages and it is therefore somewhat difficult to estimate their average relative dimensions. Fuller investigation of the various phases of both parasites obliges us to regard the difference between them to be less than we have formerly estimated it to be. It may be stated that roughly the alleged plasmodiophoræ of carcinoma are about one-fifth of the volume of the corresponding phases of the plasmodiophora brassicæ. Bodies accurately corresponding in reaction and form to the resting spore of the plasmodiophora brassicæ may be observed, especially in palladium-gold preparations, lying between the epithelial cells, among the connective tissues, in the glandular spaces of adenomata, and occasionally within the nucleus or protoplasm of the epithelial cells. (Fig. 1, B 1.) The form of the protoplasm is not always rounded. Small dark bodies, devoid of any recognisable protoplasm, may also be observed and there are some grounds for supposing that they are really of the same nature as the nucleated bodies.

Forms representing the first phase in the transformation of the spore into myxamœbæ, though rare, may occasionally be seen (B 2). Bodies which may be young myxamœbæ (B 3) are common in the intracellular spaces and may occasionally be observed in the protoplasm or nucleus of the epithelial cells. This phase is, however, one lacking in any distinctive characters. The fully developed myxamœba in both its forms is represented by bodies which may occasionally be seen in the same situations (B 4). The clear oval central portion of one of these forms with its contained dark granule has a characteristic appearance which it is difficult to believe could be simulated by mere degenerative material. The development of these myxamœbæ into the granules is represented more rarely (B 5) but the fully developed granules (B 6 and 7) are often present in abundance. It is this stage of the organism which, both in kohlhernia and in carcinoma, we have found to be in a measure specifically stained by the palladium and gold process of toning. The method is, however, uncertain in its results. Its success appears to depend upon the fulfilment of certain precise conditions as yet not understood. It has failed almost completely when again applied to a batch of sections with which on first trial it yielded a satisfactory result. In our most successful preparations by this process granular bodies, having the exact appearance and arrangement of the granular stage of the plasmodiophora brassicæ, are present in considerable numbers in the nuclei of most of the epithelial cells and occasionally also in the protoplasm (Fig. 5). They occur generally in small groups, occasionally in masses. There are grounds for believing that in silver-gold preparations these bodies are often obscured by nucleolar matter which tends to deposit around them as they lie in groups within the nucleus of the cell. Similar bodies occurring singly or in groups may be observed in some of the tissue spaces, but as various forms of degenerative granules which tend to reduce silver salts are common in this situation it is impossible to attach any special significance to them. The post-granular stage (B 8 and 9) is also represented but less abundantly than the preceding one. The bodies corresponding in reaction and in form to this stage appear also to be present chiefly in the nuclei of the epithelial cells. As they stain much less deeply than the granules they are difficult to recognise in this situation. When, however, an epithelial cell containing them divides by mitosis they are temporarily thrown into the protoplasm and can then very commonly be recognised (Fig. 6). They may be observed in large numbers in cells in which the karyokinetic figure is normal in appearance, so that they can hardly be accounted for on the supposition that they are fragments of chromatin.

The nucleated pre-conjugation stage is still less abundant (B 10 and 11). It is represented by bodies of round, oval, or irregular form which may be seen either in the nucleus of the epithelial cells or in the protoplasm of a dividing cell, more rarely in the protoplasm of a resting cell. They measure 1·3μ to 1·5μ. When in the nucleus of an epithelial cell in a silver-gold preparation, bodies of this kind are obscured by the chromatin and nucleoli. We have, however, been able to see them clearly in silver preparations which, after toning with platinum, have been stained in a special way with methyl violet (Fig. 7). In these preparations the chromatin is darkened by the platinum, whilst the supposed parasites take up the methyl violet stain. We have a silver-gold preparation in which these bodies lying in the protoplasm of a dividing epithelial cell of a carcinoma of the breast appear to be undergoing mitotic division. More or less deeply tinted non-nucleated bodies, which correspond in characters to the gametes of the plasmodiophora brassicæ, are not uncommon within the epithelial cells and in the interstitial tissues (A 12). This form is, however, so lacking in distinctive morphological characters that it certainly cannot as yet be distinguished from many products of tissue disintegration. At the same time there are some grounds for believing that at this stage the plasmodiophoræ associated with carcinoma are actively motile and that they may therefore at times exhibit the morphological characters of wandering cells. In all silver-gold preparations of carcinomata, wandering leucocytes and connective tissue corpuscles constitute a striking feature. They generally stain deeply and are often thrown out into long narrow threads as they force their way between the masses of proliferated epithelial cells. For a long time we assumed that all such appearances were to be regarded as merely manifestations of the phagocytic activity of these cells, although we again and again noted appearances which it was difficult to reconcile with this view. These consisted especially in the occasional presence of very small deeply staining bodies stretched out into fine threads and terminating at one or both extremities in the form of a minute knob. We have recently been able to study these bodies to better advantage in the palladium-gold preparations (Fig. 1, B 12, and Fig. 8). They are only rarely present and a considerable search is generally required before one is found. The terminal knob measures generally about 0·5μ in diameter. The connecting thread or tail is extremely delicate. It may measure about 4·5μ. There is, of course, no proof that these bodies are wandering gametes. We simply direct attention to their presence and point out the possibility of their being of this nature. Hour-glass forms, which would represent the conjugation of the parasites, have occasionally been observed within the protoplasm of the epithelial cells and in the surrounding tissues. This again is a form which is too indefinite in character to be distinguished from various products of tissue degeneration. The phase of the plasmodiophora brassicæ which immediately follows conjugation has, on the other hand, very distinctive features. We have a preparation from a carcinoma in which there is lying at the edge of proliferating epithelial cells a body in which these features are exactly reproduced upon a slightly smaller scale (B 14). The next stage is that of the nucleated spores which has already been described.

It will be noted that as the granular phase is receded from the supposed parasites gradually diminish in number. In this respect there is a striking difference from what obtains in kohlhernia. We have, however, only to consider for a moment the comparative conditions under which the two parasites are living to find an adequate explanation. The vegetable host differs from the mammalian one in having no phagocytic cells. There is the most conclusive evidence that very active phagocytosis is constantly in progress within carcinomatous tumours. This action may be manifested in tumours in which, as far as can be seen, there are no dead or degenerated epithelial cells requiring to be removed. As already stated, the phagocytic cells may commonly be observed fixed in the act of moving about between the epithelial cells, being stretched out into long winding threads terminating at either extremity in a bulb. Appearances may not infrequently be noted which seem to indicate that one of these bulbs has penetrated into the protoplasm of an epithelial cell. That this actually occurs seems to be borne out by the fact that occasionally a leucocyte may be observed to be wholly imbedded in the protoplasm of such a cell. The phagocytic cells lying in the tissue spaces are commonly more or less loaded with granular débris, as well as with larger particles, some of which closely resemble the larger forms of the plasmodiophoræ. The evidence points strongly to the conclusion that the parasites are constantly being swept up by these cells, which are even capable of removing them from the protoplasm of the epithelial elements and that only those that remain within the shelter of a nucleus are safe from attack. If this is so, it is easy to understand why the number of plasmodiophoræ progressively diminishes as the granular phase is receded from. Notwithstanding that a rapid proliferation continues up to the time of the formation of the gametes the destruction of the parasites by phagocytic action is so great that only comparatively few survive to form spores. A very small number of these, however, are capable of starting another cycle. The motile myxamœbæ having penetrated into the nuclei of some of the epithelial cells will be able to give rise to an almost unlimited number of granules as the host cells undergo rapid proliferation. There is ample warrant for the belief that such penetration occurs in the demonstrable fact that the myxamœbæ of the plasmodiophora brassicæ are attracted to the nuclei of the vegetable cells.

The cultivation of an organism resembling the plasmodiophora brassicæ from carcinomatous tumours.—As already indicated, we have succeeded in growing from carcinomatous tumours an organism which accurately represents certain phases in the developmental cycle of a plasmodiophora. The technique which we now employ is based upon the results of many experimental attempts to obtain cultures from such tumours. It consists essentially in placing pieces of the fresh tissue upon the dry surface of an agar medium, various important details being attended to. Through the courtesy of Mr. F. M. Caird, Mr. David Wallace, and several other surgeons, we have been enabled to obtain the tumours immediately upon their removal from the patients. We

shall describe the procedure as carried out with a mammary carcinoma. The gland with the tumour incorporated in its substance is, immediately on its removal from the patient, received upon a thick layer of sterilised gauze swabs, an abundant supply of which is always obtainable in an operating theatre. The specimen is wrapped up in these and then further covered with a sheet of sterilised protective. It is at once removed to the laboratory at which the tissues arrive unchilled and alive. Tubes of ordinary sloped nutrient agar are in readiness. The preliminary preparation that they require consists in the removal of the water of condensation and liquefaction and re-sterilisation by heat in order that a fresh and yet somewhat dry surface, free from any condensed pellicle, may be provided for the reception of the piece of tumour. Glycerine agar has been successful in one case and we have also obtained growths upon some media of special composition which, however, did not appear to have any advantage.

A large area of the posterior surface of the specimen, which in many cases is the pectoralis major muscle, is cauterised to insure its sterility. With the aid of a pair of forceps and a scalpel, both of which have been sterilised in the flame of a Bunsen burner, the posterior surface of the tumour is exposed by dissection. Small portions are then as quickly as possible cut out with another sterilised knife and placed singly upon the surface of the agar in the prepared tubes. The tissue must on no account be allowed to fall to the bottom of the tube, as contact with even the small amount of water of condensation would almost certainly prevent a successful result being obtained. It should be placed about the middle of the agar surface. The tubes containing the pieces of tissue are transferred to the incubator with as little delay as possible. They must in the first instance be laid in a slightly inclined position, so that whilst the piece of tissue is not displaced the water of condensation does not flow over the surface. The temperature is kept at 37° C. By the second or third day the piece of tissue has become adherent to the agar. The tubes may then be placed in the erect position. To prevent undue evaporation the tubes should now be sealed by pushing the cotton-wool plug in about a quarter of an inch from the margin and filling the receptacle thus formed with melted hard paraffin obtained from the imbedding oven. In our later work with this technique we have been uniformly successful in preventing contamination of the medium. This we attribute to the favourable conditions under which we have been able to obtain the material, the extensive cauterisation of the posterior surface of the specimen, and the circumstance that we have worked in the still air of the laboratory of which we are the sole occupants. We have obtained cultures of an organism which we believe to be a plasmodiophora from four tumours—namely, one malignant adenoma of the intestine (a secondarily infected abdominal gland being used for making the cultivations) and from three mammary carcinomata. The growth does not develop at the surface but invades the subjacent medium. It appears as a faint greyish cloud in from two to seven days and generally continues to increase very slowly for about ten days more. It has as yet been found impossible to obtain a satisfactory view of the organisms in films made from these growths and stained by the ordinary methods employed in bacteriology. They are either stained in conjunction with granular matter in the medium without presenting any characteristic features or they are decolourised. It is therefore easy to understand how previous observers, when dealing with such growths, which certainly must occasionally have been obtained by some of them, have concluded that the faint cloud which formed was the result of the penetration of colouring matter or coagulable substances from the dead tissue. By hardening the medium in 5 per cent. formalin and making preparations by the silver-gold process we have been able to recognise not only that the cloudiness is essentially dependent upon the growth of an organism, but that this organism has characters which prove it to be a plasmodiophora. In the sections from the growths in agar obtained from the secondarily infected abdominal gland we have been able to demonstrate the presence of several successive phases of a plasmodiophora, corresponding exactly in form and reactions to the special method with the bodies we have described as present in sections of carcinomatous tumours. In one of the agar growths from this tumour a slight splitting of the medium had been accidentally produced by the pressure exerted in fixing the tissue on the surface. Upon the walls of the crevice so formed (which extends a considerable way into the medium) there are very numerous small bodies which have the exact characters of the myxamœbæ already described. They measure from 1·2 μ to 1·7 μ. Some are devoid of the pale centre, others present this feature, whilst others again show the black granules appearing in the centre (Fig. 9). Some of these myxamœbæ have penetrated a certain way into the subjacent agar. Masses of granules, exactly corresponding to those that develop from the myxamœbæ in the incubated kohlhernia, are also present, though only a few have been observed. Similar granules, many of them of considerably larger size, are present in abundance throughout the surrounding agar but they cannot be distinguished absolutely from the fine granular deposit which is caused by the circumstance that certain substances in the agar effect the reduction of the silver salt. The large and small post-granular phases are, however, very abundantly represented (Fig. 10). They are probably the chief cause of the faint opacity in the medium. With the aid of the silver-gold method alone we have not been able to trace them with absolute certainty into the nucleated stages, but by staining the silvered sections by a special methyl violet process this structure has been demonstrated in some of the largest forms (Fig. 11). If the presence of the immediately preceding and succeeding stages may be taken as further proof of the existence of the granular stages which intervene, then we have evidence of the presence of eight phases, or four different stages, of a plasmodiophora in this growth. In the growth from two of the mammary carcinomata we have been able to recognise only the post-granular stage but the examination of them was rendered difficult by the circumstance that the agar turned out to be of too soft a consistence for the obtaining of sections that could be manipulated with facility. The examination of the growths from the fourth carcinoma is not yet completed, although we have already satisfied ourselves of the presence of the post-granular stage of the organism. For the purpose of making control observations, we have treated in the same way portions of tissue obtained from two cases of interstitial mastitis, one intra-abdominal testicle removed for torsion of its pedicle, and one simple fibro-adenoma of the breast. In no instance has any change taken place in the medium similar to that observed in the other tubes.

The bearing of the observations made upon the question of the etiology of carcinoma.—The observations that we have made can, we believe, be shown to harmonise with, and to help to explain, many otherwise unintelligible facts already recorded in the literature of the pathology of carcinoma. Our object for the present is, however, simply to record our own observations which, depending upon the results given by a new histological process and breaking fresh ground, are capable of standing by themselves. It is obvious that if, as alleged, plasmodiophoræ are present in carcinomatous tumours many of the intracellular bodies described especially by Russell and San Felice as blastomycetes, and of those interpreted by numerous others as protozoa, are simply various phases of this species of myxomycetes, for it is hardly to be believed that more than one pathogenic organism would commonly be present. The plasmodiophora theory of carcinoma has been advocated by the workers already mentioned for many years, but the evidence that has hitherto been adduced in support of it cannot be said to be conclusive. It has certainly served to convince very few. Can the new evidence that we have obtained be regarded as serving to establish the validity of this hypothesis? In our researches we have traced what appear to be three parallel lines—namely, those of (1) the life-cycle of the plasmodiophora brassicæ, (2) a series of bodies found especially within the cells of carcinomatous tumours, and (3) the stages of an organism which can be grown from such tumours. The last line is incomplete, but through eight successive phases, or four separate stages, the parallelism is exact. With regard to the histological evidence it may be affirmed that all the stages of a plasmodiophora are accurately represented in carcinomatous tumours and that it has been found impossible to construct a similar series from control tissues. At the same time many of the bodies which correspond in form and reaction to certain of the stages of a plasmodiophora are indistinguishable from certain tissue granules. The presence of any number of tissue granules does not of course logically exclude the presence of micro-organisms which are known

to have a certain resemblance to them. All that can be demanded from the histological evidence in support of a hypothesis like this is that the presence of bodies morphologically identical with the parasite as it is known in cultures or elsewhere should be demonstrated. If the supposed parasites presented no very distinctive morphological feature the evidence would certainly have very little weight. But in this case there can be demonstrated several such features of a very unusual and striking nature. The two forms of myxamœbæ, already known as they exist in the life-cycle of the plasmodiophora brassicæ, are definite forms that could not easily be simulated by the products of tissue disintegration. These forms have been observed in carcinomata and the presence of black granules in the originally clear centre of the first variety has also been noted. The bodies which morphologically represent plasmodiophoræ in the nucleated pre-conjugation stage have been observed to be undergoing what is to all appearance mitosis. The minute wandering cells which we have described cannot be identified as any cellular form known in the human subject but would exactly represent the gamete of a small plasmodiophora. Lastly, a body has been found in a carcinoma which exactly conforms to the peculiar morphological characters of that phase of the plasmodiophora brassicæ which can be shown to follow conjugation.

The evidence derived from the study of the cultures is not subject to the same ambiguity of interpretation. In the sections of the growths in agar tissue cells are absent and an organism is present which has obviously been multiplying rapidly. In one instance, at least, this organism has been found to be present in four distinct forms which harmonise exactly with four successive stages in the developmental cycle of the plasmodiophora brassicæ, as well as with that which has been found in sections of carcinomatous tissue. In cultures from three other cases of carcinoma there has also been observed an organism which is identical with the post-granular stage, as observed in the other case, and this phase is one which, in cultures at least, has a very characteristic appearance. Included in the four stages observed in the cultures from the first case are the specially characteristic forms of the myxamœbæ and the nucleated pre-conjugation stage. This evidence seems to us to be incompatible with any other conclusion than that in these cultures we are dealing with organisms which are plasmodiophoræ. Taken in conjunction with the histological evidence of the presence of similar bodies in carcinomatous tissues, it points to the conclusion that plasmodiophoræ are constantly associated with carcinomatous growths of the kind from which the cultures were made.

We have not yet had an opportunity of examining cultures from a squamous epithelioma. We have, however, examined tissues from three cases by the ammonio-silver process and whilst we recognise the uncertainty attaching to histological evidence in a question of this kind we can say that, as far as such evidence justifies the expression of an opinion, this form of carcinoma is also associated with the presence of plasmodiophoræ in the cells. We have as yet no observations to record bearing upon the question of the presence of plasmodiophoræ in sarcomatous malignant growths. We strongly dissent from the recent assumption that all malignant growths must necessarily have the same origin. To discuss this question here would, however, be to go beyond the purpose of our paper. If future observations confirm those that we have here briefly recorded and it be thus established that plasmodiophoræ are present in carcinomatous tumours the etiological relationship of the organism to these growths will hardly require further proof, although this would probably be obtainable from inoculation experiments, and if a protozoan organism of this nature, which can be grown through an important part of its life cycle, is the essential etiological factor in carcinoma it may be confidently anticipated that it will be found to be possible to produce antibodies, by the therapeutic use of which the normal protective agencies of the body will be enabled to overcome the parasites in such growths.

In concluding, we have to express our indebtedness to the Fellows of the Royal College of Surgeons of Edinburgh and to the General Board of the Laboratory of the Scottish Asylums for the facilities they have afforded us for the carrying out of the researches recorded in this paper.

APPENDIX.

The technique of the ammonio-silver process and toning methods.—The ammonio-silver process was described in the *Review of Neurology and Psychiatry* in July of last year. The following general directions for carrying it out are for convenience given here:—

1. Wash thin slices of formalin-hardened tissues (from 5 to 10 per cent. solution of formalin in water; change on the second day) for about 24 hours in a bowl of tap water. Change the water at least once.

2. Transfer to an ammonio-nitrate of silver solution, prepared by adding to a 1 per cent. solution of silver nitrate in distilled water a 5 per cent. solution of ammonia in distilled water, drop by drop, until the precipitate which forms is nearly but not entirely dissolved, and then filter. In place of this silver solution a saturated solution of silver carbonate in ½ per cent. ammonia in distilled water may be used with advantage. Two days at least should be allowed for saturation. The fluid should measure at least 50 times the volume of the tissues. Cork the bottle or specimen tube and put it in the dark. The pieces are ready for examination in from three to ten weeks.

3. Place a piece of the impregnated tissue in a bowl of water (500 cubic centimetres) to which about 2 cubic centimetres of 5 per cent. ammonia have been added. Remove the surface deposit as far as possible. This is best done simply with the aid of the fingers whilst the piece of tissue is held under water. Transfer the piece to a second bowl of ammonia and water. Renew the fluid after about an hour and leave the tissue in this for three or four hours longer.

4. Transfer to dextrine solution (dextrine five ounces or 140 grammes, water ten ounces or 280 cubic centimetres; dissolve by boiling; filter the solution through cotton wool while still hot; after it has cooled add 1 per cent. of carbolic acid) to which ammonia has been added in the proportion of ten drops of a 5 per cent. solution to one ounce, immediately before use. Allow the tissue to remain in this for from 12 to 24 hours.

5. Cut thin sections on the freezing microtome. Transfer them from the knife to a bowl of water to which about ten drops of 5 per cent. ammonia have been added. After about five minutes transfer the sections to another bowl of ammonia and water, and after a similar period give them a third wash.

6. Transfer the sections to a bowl of water to which there have been added from five to ten drops of a saturated solution of citric acid in water, and allow them to remain in this for four or five minutes.

7. Place the sections in a bowl of tap water and after a few minutes transfer them to a second bowl of water. They are now ready for toning.

8. To ten cubic centimetres of a ½ per cent. solution of gold chloride in distilled water add a single drop of a 1 per cent. solution of citric acid in water and filter the fluid, preferably into a flat-bottomed white porcelain dish. Transfer the sections from the water to this toning bath by means of a glass rod or platinum needle. Allow them to remain spread out for about one hour. About a dozen sections of ordinary size may be toned in this amount of the gold solution.

9. Place the sections for about ten minutes in a bowl of tap water and then transfer to a bowl of water to which ten drops of 5 per cent. solution of ammonia have been added, where they should remain for two or three minutes.

10. Transfer to a bowl of tap water.

11. Dehydrate the sections with absolute alcohol, clear in equal parts of turpentine and benzole; remove turpentine with pure benzole; mount in benzole balsam.

The process of toning the sections permits of being varied in an almost endless number of ways, with corresponding variations in the result. Not only may gold chloride be variously combined with other substances but certain other heavy metals may be made to displace the silver deposit. We have especially experimented with salts of platinum, palladium, iridium, ruthenium, and vanadium. It is also possible to follow the toning by staining with aniline dyes. In the meantime it must suffice to indicate briefly the details of two special toning processes which we have found to be useful.

Platinum toning of the silvered sections may be carried out as follows. To one ounce of freshly prepared ½ per cent. solution of potassium chloroplatinite in water add ten drops of a 5 per cent. solution of phosphoric acid in water (citric acid may be used instead). Filter this solution and place the sections in it for about half an hour. Wash the sections shortly in water and then clear them in a watch-glassful of 1 per cent. solution of platinum bichloride ($PtCl_4$) in water for about ten minutes. Wash well in water, dehydrate, clear, and mount in balsam.

The conditions upon which depends the success of the combined palladium and gold toning process have not yet been definitely ascertained. The best results have been obtained with sections of a formalin-hardened tumour which had been for two weeks in an ammonio-silver solution prepared with 5 per cent. silver nitrate and 5 per cent. ammonia solutions. The sections were placed for half an hour in a strong solution of palladium chloride slightly acidulated with citric acid, and after having been washed shortly in water they were further treated for a similar period with ½ per cent. gold chloride rendered faintly acid with citric acid. The sections were then simply washed in water, dehydrated, cleared, and mounted in balsam. In using palladium chloride for the toning of sections it is important that the fluids should be slightly acid throughout, as black granular precipitates may be formed in the presence of alkalis.

Edinburgh.

THE RESULTS OF TWO CASES OF INJECTION OF PARAFFIN.

BY F. C. WALLIS, F.R.C.S. ENG.,
SURGEON TO CHARING CROSS HOSPITAL, ST. MARK'S HOSPITAL, AND THE GROSVENOR HOSPITAL.

CASE 1.—A single woman, aged 32 years, was sent to me by Sir Francis Laking on Nov. 2nd, 1904, because of considerable and increasing difficulty in getting the bowels to act. The history given was that the present condition had been gradually arrived at and the patient was getting thinner. The difficulty of procuring any action of the bowels

was now considerable and was accompanied by slight loss of blood. There were a dull aching pain and feeling of weight in the rectum and some slight difficulty in passing urine. On examination the rectum was not in itself found to be the cause of the trouble but a large tense swelling in Douglas's pouch was felt which was evidently causing the obstruction. Examination of the abdomen revealed a swelling in the right side of the hypogastrium. Above the pubes and to the left there were some hard, rounded lumps to be felt. Dr. R. A. Gibbons saw the patient the same day and elicited the information that because of prolapse of the uterus paraffin wax had been injected into the broad ligaments two years previously. The patient's temperature was normal and up to the time she consulted me she had been carrying out the details of her ordinary daily life.

On examination per vaginam (under an anæsthetic) the vagina was found to be considerably invaded by the swelling felt per rectum, the cervix was high up, and around it various hard round lumps could be felt. The uterus was not fixed. The tumour was obviously one of three things: an ovarian cyst, a parovarian cyst, or some collection of fluid in the broad ligament the result of the paraffin injection. Whichever it was, the necessity for operation was somewhat urgent.

On Nov. 9th I opened the abdomen, Dr. C. H. Roberts assisting me. I found a large tense swelling filling up the pelvis but there was no indication of a cyst in connexion with the uterine appendages and the swelling was adherent everywhere. In such circumstances it was not considered advisable to attempt anything further by the abdomen and the incision was closed by two continuous silk sutures for the peritoneum and fasciæ and interrupted fishing-gut sutures for the skin. With the patient in the lithotomy position the swelling was incised through the posterior wall of the vagina. Nearly 40 ounces of inodorous pus were evacuated mixed with a considerable amount of paraffin which came away in lumps and flakes. The incision was enlarged sufficiently to allow a digital examination of the abscess cavity. Various masses of paraffin could be felt but they were firmly fixed and the wall between them and the peritoneal cavity was so thin that no attempt was made to remove them. The cavity was washed out and a large-sized drainage-tube was introduced and sutured to the vaginal opening. The abscess cavity was irrigated twice daily with sterilised water, after which some peroxide of hydrogen was introduced. The cavity disappeared rapidly and at the end of 12 days a probe could only be passed one and a half inches through the incision in the vaginal wall and this small sinus soon healed. The abdominal incision healed well and the skin sutures were removed on the eighth day.

Everything went well until the twentieth day when there were a rise of temperature and some abdominal tenderness and swelling on the right side; this increased for the next three days. No definite swelling was felt per vaginam and I determined to reopen the abdominal wound, as it seemed possible that there was suppuration under the right rectus muscle. Under the anæsthetic the abdominal walls, which previously were rigid and extremely tender, became relaxed and moved freely. A small incision was made at the side of the former incision. The tissues were found to be quite healthy. The abdomen was opened and a large tense swelling was seen lying immediately under the right rectus. This was considered to be another separate collection of pus situated anteriorly and the abdominal incision was closed. Both Sir Francis Laking and Dr. Gibbons thought it highly desirable to wait until the swelling could definitely be felt in the vagina. This I decided to do.

The day after the second operation the temperature fell to normal and remained so. The abdominal swelling and tenderness rapidly diminished and at the end of a week, when the stitches were removed, the swelling had almost disappeared and there was hardly any tenderness. The patient left the nursing home to go to the seaside six weeks after the first operation, feeling and looking well, but there was still some tenderness under the right rectus on firm pressure.

CASE 2.—A woman, aged 66 years, was admitted into St. Mark's Hospital under my care on April 11th, 1904. She gave the following history. For three or four years previously she had suffered from prolapse of the rectum, the bowel protruding about three inches. Late in January, 1904, she was admitted into a hospital where she underwent operation, apparently by the injection of paraffin wax into both ischio-rectal fossæ; she was in hospital six weeks altogether. A fortnight after leaving the hospital she "felt something burst behind" and noticed that her linen was covered with a white, waxy substance; since that time she had had a constant discharge from a small sinus in the right peri-anal region. The bowel had not prolapsed so much since the operation but she had suffered a good deal of pain in the back which was worse when sitting down.

On examination there was a hard, tender lump in the left buttock close to the anus; the skin over the lump was hot, dusky-red, and tender. On the right side, about half an inch from the anus, was the orifice of a sinus which ran up by the side of the rectum for about two and a half inches. A probe passed into the sinus could be felt beneath the mucous membrane but no definite internal opening could be made out. On squeezing the sinus small portions of wax and a little thin pus could be expelled. The patient was advised to return to the hospital at which she originally attended for further treatment, as this course on the whole seemed to be the most satisfactory. I have to thank my house surgeon, Mr. F. A. Johns, for the notes in this case.

Whether the injection of paraffin into the broad ligament is ever advisable or even justifiable is a question upon which I should like a definite opinion from those who make a special study of the uterus and its appendages. The ultimate results in Case 1 were disastrous enough and there is no assurance that a recrudescence of the trouble may not occur at any time. Supposing that the paraffin is sterile at the time of injection, which is doubtful unless special precautions are taken, this is no guarantee that it will always remain so and, as these cases illustrate, it may possibly act as a culture medium in a part of the body where pyogenic micro-organisms always abound. The result in Case 2 is also unsatisfactory and having regard to the excellent results obtained by other methods in cases of prolapsus ani I do not think that the injection of paraffin wax is to be advocated.

The injection of paraffin wax has been used for cases of incontinence after excision of the rectum, but the result is not a success, there cannot be any *control* obtained by this injection. The paraffin wax forms a number of lumps round the lumen of the bowel, which is partially occluded, but the contents of the bowel escape as readily as before between the lumps. These remarks are not meant in any way to detract from the merits of this treatment in certain cases. The good results obtained are well known. The injection of paraffin wax, however, like many other new treatments, has been taken up and used without discrimination and unless this is checked a treatment which in proper cases produces excellent results may fall into disrepute.

Harley-street, W.

ON THE RELATION BETWEEN VARIOUS ATMOSPHERIC CONDITIONS AND THE OCCURRENCE OF CEREBRAL HÆMORRHAGE.

BY JAMES W. RUSSELL, M.A., M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

Dr. R. Hensleigh Walter has suggested[1] that in certain cases a high barometric pressure is a factor in deciding the onset of an attack of cerebral hæmorrhage, the especially favourable condition being, in his opinion, a sudden rise in the barometer following a more or less continued period of depression. Dr. Walter's letter was followed by others in support of his suggestion, in one of which the writer stated that he fully expects to be called to a case of cerebral hæmorrhage when the barometer has risen high and become anti-cyclonic. Other writers were in favour of a rise or fall in temperature as a probable exciting cause, especially when associated with changes in the atmospheric pressure, and it was evident that a belief in a causal relationship between atmospheric changes and the onset of apoplexy exists in the minds of many practitioners. The question can easily be put to the test and having recently collected for other purposes the cases of cerebral hæmorrhage admitted into the Birmingham General Hospital from the summer of 1885 to the end of 1902 I have the material

[1] Brit. Med. Jour., April 9th, 1904.

ready to hand. My information as to the atmospheric conditions existing on the days of onset has been obtained from the records of the Edgbaston Observatory kept by Mr. Alfred Cresswell, but as these have only been published since the beginning of 1891 only the cases occurring since that date have been available.

I have records of 66 fatal cases of cerebral hæmorrhage admitted into the General Hospital since January, 1891, in all of which the diagnosis was established by post-mortem examination. There are further 62 cases not terminating fatally (excluding those in which the exact date of onset was not determinable) which appear to me to have been probably due to hæmorrhage. In these, however, the diagnosis is somewhat open to question and it is possible that a certain number of cases of thrombosis may have been included and that others due to hæmorrhage may have been omitted. The inferences from these cases must therefore be regarded as to some slight extent doubtful and the two series have been throughout kept apart.

Barometric pressure.—The barometric readings from which my figures are obtained were taken at 9 A.M. They therefore only approximately represent the pressures obtaining at the actual moment of onset. But this source of error is hardly avoidable, especially as the notes often give no clue as to the time of day at which the attack began. The standard of comparison adopted is the average pressure for the 12 years involved. This, I have ascertained, amounts to 29·376 inches. The pressures recorded on the days of onset are as follows:—

	Fatal.	Non-fatal.	Total.
Above the average	37	34	71
Below the average	29	28	57

A larger number of cases therefore occurred on days on which the barometric pressure was above the average than on those when a pressure below the average was recorded, the proportion in the total number of cases being almost exactly as 5 to 4. The relationship to the higher pressures of each month is shown in the next table:—

	Fatal.	Non-fatal.	Total.
Occurring on the day of the maximum pressure of the month	3	3	6
Occurring on days with the pressure differing from the maximum pressure of the month by not more than 0·1 inch	8	5	13
Occurring on the day after the maximum pressure of the month	4	3	7
	15	11	26

These figures are probably to some extent matters of coincidence but they are considerably in excess of similar figures obtained with regard to the minumum pressure of the month, thus:—

	Fatal.	Non-fatal.	Total.
Occurring on the day of the minimum pressure of the month	1	3	4
Occurring on days with the pressure differing from the minimum pressure of the month by not more than 0·1 inch	4	2	6
Occurring on the day after the minimum pressure of the month	3	2	5
	8	7	15

Some little connexion between the onset of apoplexy and the higher pressures of the month seems thus to be suggested. But it is possible that variations in pressure may be of greater importance than the absolute height of the barometer. In order to work this out I have investigated the pressures recorded on the three consecutive days on the middle one of which the attack occurred. The explanation of the signs used is as follows:—

<> = a day of higher occurring between two days of lower pressure.
< = three successive days of rising pressure.
> = three successive days of falling pressure.
>< = a day of lower occurring between two days of higher pressure.

The following are the results:—

	<>	<	>	><
Fatal	11	23	16	16
Non-fatal	18	19	12	13
	29	42	28	29

A considerable excess of cases therefore occurred in the course of a steadily rising barometer. In 19 of these the total rise exceeded 0·4 inch, in nine it exceeded 0·5 inch, but in only one was it more than one inch.

Taking the day of onset alone, 71 cases occurred with a rising barometer, compared with 57 noted when the barometer was falling. The proportion is again almost exactly as 5 to 4 and the evidence in favour of absolute height and of rise from a lower to a higher level as a factor in the causation of hæmorrhage is identical. The inference would probably be in favour of abeolute height as the important factor.

Temperature.—It has been stated that cerebral hæmorrhage occurs more frequently in the colder months of the year. This was the case in the 241 cases admitted into the General Hospital since the summer of 1885, 134 occurring from November to April inclusive, against 107 from May to October.

	Fatal.	Non-fatal.	Total.		Fatal.	Non-fatal.	Total.
January ...	11	12	23	July	9	10	19
February ...	13	12	25	August ...	9	16	25
March	7	16	23	September ...	5	12	17
April	8	13	21	October ...	8	5	13
May	7	9	17	November ...	6	15	21
June	7	10	17	December ...	9	12	21

But the part, if any, played by temperature is more likely to be demonstrated by examining the daily fluctuations. This I have attempted to do by comparing the maximum and minimum temperatures recorded on the day of onset with the respective averages for the month.

	Fatal.	Non-fatal.	Total.
Maximum temperature above the average ...	32	33	65
Minimum ,, ,, ,, ...	32	29	61
Maximum ,, below ,, ...	34	29	63
Minimum ,, ,, ,, ...	34	33	67

Temperature in itself is therefore not shown to have any effect in deciding the onset of an attack. Not much more can be said for the combined effects of barometric pressure and temperature, as shown below:—

	Fatal.	Non-fatal.	Total.
B. + and T. + ...	20	19	39
B. + and T. −	17	15	32
B. − and T. + ...	13	14	27
B. − and T. −	16	14	30

Where B. = barometric pressure, T. = maximum temperature, and the signs + and − represent excess over the average and the reverse.

Changes in temperature have been examined by taking the records on three consecutive days as before:—

	<>	<	>	><
Fatal	11	19	12	24
Non-fatal	14	17	17	14
	25	36	29	38

The only possible suggestion that can be drawn from this table is that a rise of temperature on any particular day is slightly favourable to the occurrence of an attack, 74, or 57·8 per cent., of the cases occurring on days on which a rise of temperature was in progress. But this excess is only shown in the fatal cases.

The effect of combined changes in pressure and temperature on the actual day of onset is shown in the next table, in which the fatal and non-fatal cases are taken together:—

Barometer rising and temperature rising	41 cases.
Barometer falling and temperature falling	24 ,,
Barometer rising and temperature falling	30 ,,
Barometer falling and temperature rising	32 ,,

In one case the same temperature was recorded on two successive mornings. The suggestion is that a combined rise of pressure and temperature is favourable to the occurrence of cerebral hæmorrhage; but in only 11 of the 41 cases of combined rise was the difference between the maximum temperature on the day of onset and that of the following day greater than 5°, and with only three exceptions this rise corresponded with a rise of barometric pressure of less than 0·2 inch. The evidence in favour of combined rise of pressure and temperature as a causal factor is thus extremely small and on the whole it seems fair to conclude that temperature, apart from season, exerts little influence in the determination of an attack of apoplexy.

Wind pressure.—The extreme pressure of the wind for each day is only recorded at the Edgbaston Observatory when it amounts to not less than 0·5 pound per square foot and in order to obtain the average pressure I have estimated it at 0·25 pound on those days on which no record is entered. The average extreme pressure for the 12 years is then 2·2 pounds. The cases are distributed as follows:—

	Fatal.	Non-fatal.	Total.
Above the average	24	12	36
Below the average	42	50	92

Here the figures for the first time give a very definite result, the cases occurring on days of low wind pressure being 2·6 times as numerous as those which occurred when the wind pressure was above the average. This result must be taken for what it is worth. It is hard to believe that variations in wind pressure can play any part in the causation of apoplexy and a larger number of cases might, of course, dispose of the inference, but if statistics are worth anything in such matters the preponderance of cases on days of low wind pressure is almost too marked to be the result of coincidence only.

The final table shows the distribution as regards wind pressure and barometric pressure combined:—

	Fatal.	Non-fatal.	Total.
B. + and W. + ...	7	5	12
B. + and W. −	30	29	59
B. − and W. + ...	17	7	24
B. − and W. −	12	21	33

There is thus a very marked preponderance of cases on those days on which a high atmospheric pressure was combined with a low wind pressure.

Conclusions.—There seems to be a slight tendency towards the occurrence of cerebral hæmorrhage on days of high atmospheric pressure and also on days of rising pressure, the former being probably the important factor. There is a very marked tendency on days of low wind pressure and the combination of a low wind pressure with a high barometric pressure is the condition under which the largest number of cases took place. Apart from season, temperature in itself has not been shown to exert any influence, though a small excess of cases has been noted on days with a rising thermometer and also with a combined rise of atmospheric pressure and temperature.

Birmingham.

THE OVARIAN LIGAMENT AND ITS RELATION TO PREGNANCY OCCURRING AFTER ABLATION OF THE OVARIES.

BY JOHN H. DAUBER, M.B., B.CH. OXON., M.R.C.P. LOND.,

PHYSICIAN, WITH CARE OF OUT-PATIENTS, TO THE HOSPITAL FOR WOMEN, SOHO.

MORPHOLOGY often throws light upon phenomena which are otherwise obscure and not easy of comprehension. Several cases have been placed on record where pregnancy has taken place notwithstanding the complete removal of both ovaries. Such cases naturally excite considerable interest. They are generally explained by the assumption that both ovaries have not in truth been entirely removed. Every operator knows how difficult, nay, impossible, it is in many instances of cystic and inflammatory conditions of the appendages to assert with absolute confidence that every trace of ovarian tissue has been taken away. Some of the cases recorded, however, seem indubitably to disprove this source of fallacy and it is generally believed either that accessory ovaries or additional patches of ovarian tissue like accessory thyroids in the neck may exist in the broad ligaments or that traces of ovarian tissue are present in the ligament of the ovary and are responsible for the ova which become fecundated under these unusual conditions. It is to be remembered that a single Graafian follicle is enough to accomplish the purpose. A consideration of the morphology of the ovarian ligament makes the presence of Graafian follicles within it easily understandable and as the commonest facts are apt to be forgotten a reference to the subject may perhaps be excusable.

Hertwig, in his "Lehrbuch der Entwicklungsgeschichte," says of the inguinal ligament:—

The band is divided into three parts—the first from the lower end of the ovary to the uterus; the second part from the uterus to the inguinal region, the ligamentum teres; the third the uppermost, connecting the parovarium with the hilum of the ovary.

McMurrich ("Development of the Human Body") speaks of its origin thus:—

From each genital ridge a prolongation of mesenchyme extends downward in the mesentery of the ridge, nearly parallel with the Müllerian duct, with which it comes into contact at the part where the two ducts fuse and thence is continued downwards and forward between the folds of the broad ligament to be attached to the ventral wall of the abdomen in the inguinal region. The upper part of this prolongation of the genital ridge represents the ligament of the ovary and its lower part the ligamentum teres of the female, while in the male the entire structure forms what is known as the gubernaculum testis.

Further—

The change of position [of ovaries and testes] is partly due to the rate of growth of the inguinal ligaments being less than that of the abdominal walls, the reproductive organs being thereby drawn downward towards the inguinal regions where the ligaments are attached. The attachment is to the bottom of a slight pouch of peritoneum which projects a short distance into the substance of the genital swellings and is known as the canal of Nuck in the female and in the male as the vaginal process. In the female a second factor combines with that just mentioned. The relative shortening of the inguinal ligament acting alone would draw the ovaries toward the inguinal region but the fusion of the lower ends of the Müllerian ducts, since the inguinal ligaments are united with these, produces a traction towards the median line so that the organs come to lie finally in the true pelvis.

Heisler ("Text-book of Embryology") says:—

The inguinal ligament in the female extends from the primitive position of the ovaries in the lumbar region of the abdominal cavity to the groin where it passes through the abdominal wall, traversing the inguinal canal, to terminate in the labium majus. The upper part of the ligament *containing involuntary muscular substance* firmly unites with the ovary. In the third month the ovary descends to the lower part of the abdominal cavity and is now connected by the succeeding portion of the inguinal ligament with the uterus. This connexion may be a factor in the final position of the ovary—that is, its descent into the true pelvis. The part of the inguinal ligament that passes from the ovary to the uterus is the permanent ligament of the ovary, while the remaining portion, which passes from the uterus through the inguinal canal to the labium majus of the vulva, is the round ligament of the uterus. As the inguinal ligament perforates the abdominal wall a small diverticulum of peritoneum goes with it. Normally, this peritoneal pouch subsequently becomes obliterated.

Arthur Keith ("Human Embryology and Morphology") describes these ligaments in the following terms:—

The round ligament of the uterus is attached to the Müllerian duct on each side. The point of attachment marks the junction of the uterine and Fallopian segments of the Müllerian ducts. The round ligament corresponds to the gubernaculum testis in the male and its development is similar. ..... Part of the Wolffian ridge is continued backwards as a peritoneal fold to the groin, this part forming the inguinal fold. Into this peritoneal fold muscle cells grow from the rudiments of the transversalis and internal oblique in the abdominal wall and form the round ligament of the uterus. The point from which the ingrowth springs becomes the internal abdominal ring. Others grow out into the labium majus carrying with them a process of peritoneum, the canal of Nuck. The inguinal canal and external abdominal ring and extra-peritoneal part of the round ligament are thus formed. Also, the upper part of the uro-genital mesentery forms the diaphragmatic fold or plica vascularis. This in the female becomes the ovario-pelvic ligament. A fold of peritoneum, the inguinal fold or plica gubernatrix, continues the *common uro-genital mesentery to* the groin. The gubernaculum testis is developed in the plica gubernatrix; in the corresponding fold in the female the round ligament of the uterus appears.

There is no trace of the inguinal canal in the third month; the various layers of the abdominal wall are unbroken. In the fourth month the deep muscular layer of the abdominal wall composed of the internal oblique and transversalis bends inwards and expands the plica gubernatrix with muscular and fibrous tissue. The tissue (in the male) does not stop short at the uro-genital ridge and Müllerian duct as in the female but grows up and seizes the caudal pole of the testis.

Heisler states, with Bland-Sutton, Strangeways, and others, that involuntary muscular tissue extends to the ovary. Schäfer writes of it as follows:—

The reproductive gland is in both sexes at first attached directly to the Wolffian body which itself is attached by a fold of peritoneum to the back of the abdominal cavity, the mesorchium or mesovarium. A band also passes from the Wolffian body upwards to the diaphragm and another containing involuntary muscular fibre—the plica gubernatrix—runs down towards the groin from the lower part of the Wolffian body and the duct.

From the foregoing extracts it will be seen that up to the present great uncertainty exists as to the exact mode of origin of the inguinal ligament and especially of the muscular tissue it contains. Is it laid down *in situ?* Does it grow downwards or upwards or both? Are testicle and ovary dragged down by the muscular fibres of the inguinal ligament or are they to some extent at least retained in

place by the ligament while the fœtus grows, or is the process a mixed one? If the ligament of the ovary containing muscular fibres seizes the caudal extremity of the ovary and exerts traction upon it it is easy to understand how ovarian tissue may be dragged into its proper substance and be left behind after removal of the ovary and ligation of the ovarian ligament. As the fœtus grows traction may be made both ways upon the ovary as the uro-genital mesentery becomes stretched out. The upper portion of the uro-genital mesentery, the ovario-pelvic ligament, may be considered to be dragged down from its original attachment to the diaphragm or to be left behind as the diaphragm recedes from it. In either case it would appear that some traction is made upon it in fœtal life so that it would not be surprising to find Graafian follicles in the ovario-pelvic ligament as well as the ovarian ligament. I have myself seen on two occasions great elongation of the ovaries—in one instance amounting to three and three-quarter inches by measurement immediately after removal, without manipulation—not that the hypertrophy in these cases could be attributed to traction of the ovarian ligaments. To me, however, it is quite conceivable that traction may in some instances account for the presence of Graafian follicles within the ovarian ligaments.

The consideration of ovarian hernia throws little light upon the problem because the inguinal ligament is attached to the cornu of the uterus in such cases as in normal conditions, except that it may drag upon the uterine cornu. If the ovary were dragged into the inguinal canal by a true gubernaculum forming no connexion with the uterus but coming directly from the genital gland, as in the testis, it would be a very interesting fact, but this appears never to be the case. In congenital herniæ the tube generally accompanies the ovary into the sac—often together with an enterocele, as Langton has shown. It appears to be a true hernia or protrusion of the viscus into a patent or potentially latent diverticulum of peritoneum, as in femoral and obturator hernia. The whole subject of the relation of the ovary and ovarian tissue to the ligaments does not appear to have been worked out very fully. Works on veterinary anatomy and comparative anatomy hardly allude to it. I cannot but think that the matter is worthy of more attention than it has hitherto received.

Charles-street, W.

A CASE OF SEPTATE UTERUS AND VAGINA; PREGNANCY IN THE RIGHT HALF; DELIVERY.

BY CLAYTON A. LANE, M.D. LOND.,
CAPTAIN, I.M.S.

A BENGALI female, aged 25 years, was admitted into the Eden Hospital, Calcutta, on March 13th, 1901, for her confinement, she being in pain at the time. She stated that she began to menstruate at the age of 12 years, the flow since then having been regular, free, painless, and lasting for seven days. She had last menstruated in August, 1900. On examination the abdomen showed a swelling limited almost entirely to the right half; it reached to the rib margin above and disappeared into the pelvis below; its left margin, running from above downwards and to the left, crossed the middle line at the level of the umbilicus. The swelling was tense and the outlines of the child could only indistinctly be made out. On examining by the vagina there was a thick fleshy septum dividing the vagina into two lateral halves, each of which was as capacious as the other. With a finger in each half of the vagina two distinct external ora could be felt. The two halves of the cervix were firmly united and not moveable upon one another, nor could any anterior or posterior groove be made out in the cylindrical cervical mass. Vaginal examination gave no clue as to which half of the uterus contained the fœtus, but from the lateral deflection of the fundus to the right there remained little doubt that the child lay in that half, and that the left half formed part at least of the mass which lay to the left of the mid-line at the pelvic inlet. She had no discharge of blood and her pains disappeared, so she left hospital five days later. She was readmitted in labour on May 20th, 1901. It may be here stated as illustrating the value of histories given by natives of India that she now said that her menstruation lasted as a rule only two days. She had been in labour for five hours and on examination of the abdomen the uterine tumour still lay obliquely, the fundus being entirely to the right of the mid-line, and the left border crossing this two inches above the umbilicus. The lower segment, on the other hand, lay more to the left than to the right of the mid-line. On vaginal examination the septum between the two halves of the vagina was still intact for the lower inch, but above this it was torn through, so that when one finger was introduced into each half of this passage they met beyond the remaining bar. Above this bridge of tissue was felt the intact bag of membranes inclosing the presenting part, which consisted of the breech and both feet lying in the first position. With each pain the child was forced down against, and directly impinged upon, the remains of the vaginal septum, so that this bridge of tissue formed a definite barrier restricting the further progress of the child. It was accordingly cut through and each half clamped to stop some oozing which was taking place from the cut surfaces. The perineum was somewhat rigid and the vulval orifice was narrow. The pains being good, the membranes were ruptured and the case thereafter left to nature until the breech was widely distending the perineum. The forceps clamping the remains of the septum were then removed and the child's legs were brought down without traction being made on the body. Progress then ceased, the pains lessened markedly in frequency, and the legs became blue. The hand was accordingly introduced into the vagina and both arms were brought down; they were not extended and were released without difficulty, but the necessarily rapid introduction of the hand past the breech, which was already distending the perineum, caused rupture of the latter as far as the anterior edge of the sphincter ani. By extending the legs of the child over the mother's pubes the face was born and the child was enabled to breathe, although the vertex was retained in the passage for another minute. The child breathed satisfactorily. The placenta was expressed on account of slight bleeding. The cut edges of the septum were closed by continuous catgut sutures, one suture lying on the anterior and one on the posterior wall of the now single vagina. Examination showed the remains of the torn upper part of the vaginal septum. The rent had extended up to the cervical portion of the septum, reaching as far as the internal ora, so that there was now a single cervical, just as there was a single vaginal, cavity. When the finger was passed into the cervical cavity it impinged at the level of the junction of the body and cervix of the uterus upon the lower edge of that part of the septum which divided the body into two lateral halves. Into the left half it was just possible to pass the finger to its whole extent, the surrounding walls being in contact with it on all sides, while into the right half the finger entered easily and revealed a capacious cavity. The perineum was then sutured, a continuous catgut suture being used for the mucous membrane and four interrupted silkworm-gut sutures for the more superficial parts. Some oozing from the uterine cavity was checked by the intramuscular injection of 10 minims of ergotin. The patient's subsequent progress was satisfactory. Her temperature rose to 100·6° F. the same evening but fell to 98·4° at midnight; the highest points touched subsequently were, on the second day 99·4°, on the third 99·2°, and on the fourth 100·4°, after which it did not again rise above normal. The discharge followed the usual course and ceased on the eleventh day. On the thirteenth day the perineum had quite healed and was of good depth. The torn septum had nearly disappeared, being only represented by a markedly visible median raphe, palpable as a firm cord, and continued on to the anterior and posterior surfaces of the vaginal cervix as a median red line. Except for this the cervix did not appear unusual. There was a single external os, patulous, about three-quarters of an inch wide, admitting the tip of the finger, which could then just feel the persistent remains of the septum between the two halves of the cavity of the uterine body. On bimanual examination the body of the uterus was anteflexed. It appeared to be single, no groove being palpable on either surface or on the fundus. It was wider than normal from side to side but not from before backwards, and it was symmetrical, the two halves appearing to be of the same size. The pelvic cavity, as estimated by the finger in the vagina, did not appear to be wider from side to side than usual. The length of the intercristal

diameter was 9·875 inches and that of the interspinous 7·5 inches.

Judging by the number of cases reported a septate uterus and vagina with pregnancy in one-half appears to be a far less common abnormality than is bifid or bicornute uterus, with or without a septate vagina associated with the same condition. So far as could be ascertained with the references at my disposal here there had only been two similar cases described in English literature up to the end of the year 1901, the date at which this note was originally written. One case was published in 1888.[1] The woman was pregnant twice. In the first labour she was seen by Dr. Culpin and Dr. G. E. Herman. At this time the upper part of the vaginal septum was torn, the lower part remaining intact. In the second labour the remains of the vaginal septum were torn but it does not appear that the intercervical septum tore, for it is expressly stated that during labour the head could be pushed aside and the os (presumably the external os) of the unimpregnated side felt. On this occasion she was examined by Mr. W. H. Plaister and Dr. Herman. The second case is one described by Dr. Wallace.[2] The left half of the uterus was the seat of pregnancy; it was hard to the feel, and the right half is described as feeling like a "muscular mass on a muscular cyst." The description of the labour was promised when it occurred but it does not seem to have been published. Recently two more cases have been described. Dr. Pery[3] has reported in the *Revue Mensuelle de Gynécologie, Obstétrique, et Pédiatrique de Bordeaux* a case of a labour at six months in which the right half of a septate uterus contained the fœtus. The condition of the uterus and its relations to the abdominal wall were almost exactly as described in the case now reported when she first came under observation with false labour pains. During labour the lower third of the septum which was present between the two halves of the vagina was torn. There had been no menstrual hæmorrhage from the left half of the uterus during pregnancy, but a decidua seems to have been passed before Dr. Pery was summoned and was thrown away by the midwife. He is of opinion that pregnancy had also occurred in the left half. Lastly, in THE LANCET[4] there is a full report by Dr. J. H. E. Brock of a case which he considers to be one of uterus didelphys because the two halves were moveable on one another and crossed one another diagonally. The patient went through one pregnancy and labour without anything occurring to suggest that there was any abnormality of the parts. She then consulted Dr. Brock for dyspareunia and on examination the septum dividing the vagina into two halves was discovered and removed. Two years later she became pregnant in the left half of the uterus, the abdominal condition at term being almost exactly that described in the case now published except for transposition, while vaginally the two halves of the cervix lay diagonally and the bodies were felt to cross one another. The labour passed off uneventfully.

In the case now reported no rectal examination was made with a view to determine whether the two halves of the uterus could be moved one on the other. This was not perceptible per vaginam, nor were the two halves of the uterus diagonally placed before, during, or after labour; and in addition it is to be noted that the thickness of the intrauterine portion of the septum, as indicated by the portion left untorn after labour, did not appear to be such as to suggest that it was made up of the loosely attached halves of a double uterus. All the facts appear to point to the conclusion that the case was one of septate uterus and vagina and not uterus didelphys. In conclusion, I am much indebted to Lieutenant-Colonel F. S. Peck, I.M.S., for his kind permission to publish this case.

Calcutta.

[1] Brit. Med. Jour., vol. i., 1888, p. 966.
[2] The London Medical Record and Recorder, 1890, p. 435.
[3] Vide epitome, Brit. Med. Jour., vol. i., 1903, sec. 20.
[4] THE LANCET, Nov. 15th, 1902, p. 1319.

RUSSIAN MEDICAL STUDENTS. — The *Novoe Vremya* says that in view of the war, the liberation of medical students at the Military Medical Academy will be advanced this year as it was last. The final examinations will begin in the first half of March and will close in the middle of May. In any case the number will be very small as they can be selected from only 70 students.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF DEPRESSION OF THE LEFT PARIETAL BONE IN AN INFANT WITH MARKED PRESSURE SYMPTOMS.

BY D. ASHLEY WILSON, M.B., CH.B. GLASG.,
HOUSE SURGEON (OUT-DOOR DEPARTMENT) TO GLASGOW MATERNITY HOSPITAL.

THE patient in the present case was a boy who was born at full term on Dec. 10th, 1904, the mother being a primipara and married. She was well developed and the pelvis showed no abnormality, the following being the measurements: intercristal diameter, ten inches; interspinous diameter, nine and a quarter inches; external conjugate diameter, seven and a half inches; and diagonal conjugate diameter, four and a half inches. After a labour in which the first and second stages lasted 13 hours the child was born somewhat precipitately, resulting in an incomplete tear of the perineum. The child, on inspection, was found to have a marked depression of the left parietal bone, somewhat oval in shape, measuring three inches in length and two and a quarter inches across. It occupied the upper two-thirds of the bone. On Dec. 11th, 30 hours after birth, the child developed marked symptoms of cerebral irritation. The arms became flexed and rigid and there were constant twitchings of both hands and fingers but more especially on the right side. The feet showed twitching movements to a less extent. The head was drawn to the right side and there were present also twitchings of the eyes and mouth but no definite squint or abnormality of the pupillary conditions.

As the pressure symptoms showed no signs of improvement the following operation was performed on the evening of Dec. 12th, 24 hours after the commencement of the symptoms. A flap was reflected and the bone having been incised just below the lower border of the depression a periosteal elevator was introduced between the bone and the dura mater and the depression was raised gradually. The wound was then closed and a dressing was applied in the ordinary way. The symptoms gradually diminished until 35 hours after operation, when the child slept well, and since that time there has been no reappearance of the twitchings. The patient has made an uninterrupted recovery and on Dec. 22nd, when the dressing was removed, the wound was found to have healed by first intention.

I have to thank Dr. J. M. Munro Kerr, under whose care the mother and child were, for the facilities which he has afforded me and also to thank Dr. N. C. Rogers for permission to make extracts from the ward journal.

Glasgow.

A CASE OF SEVERE COUGH AND LOSS OF WEIGHT DUE TO ROUND WORMS IN THE INTESTINE.

BY PROSPER ST. LEGER LISTON, L.R.C.P., L.R.C.S. IREL.

THE following case is, I think, of sufficient interest to be recorded.

The patient was a boy, 13 years of age, who measured 4 feet 11 inches in height and weighed 36 pounds. He was brought to me months ago suffering from an intense earache. His mother told me he had been taken to several medical men who told him that he was "in consumption." He had had cough, expectoration, and night sweats, the expectoration being often blood-stained, and was wasted to an extraordinary degree. His temperature was 104° F. His abdomen was enormously distended and painful, there was great diarrhœa, he had no appetite, and very rarely had more than one hour's rest at night. The family history showed that two sisters had died from some vague stomach trouble. On examining his throat I found an intestinal worm with its head firmly wedged into the Eustachian opening and I had great difficulty in pulling it away, after which the boy experienced immediate relief.

I prescribed santonin, calomel, and scammony for a fortnight and at the end of that time he voided, either by vomiting or per rectum, 603 round worms, varying in length from four to nine inches. Since this clearance his cough has disappeared, he has gained 14 pounds in weight, and his appetite has returned.

Penryn.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF CONJUNCTIVAL ARTHRITIS IN AN ADULT.

(Under the care of Dr. W. MURRELL.)

A MAN, aged 25 years, was taken to Westminster Hospital in an ambulance on Sept. 21st, 1904, suffering from what was supposed to be rheumatic fever. The history was that on the previous day, being then in perfect health, he had an attack of acute double conjunctivitis followed in a few hours by inflammation of the right wrist and the left knee. The patient on admission had a temperature of 101·8° F. and was sweating profusely. On examination it was found that the wrist itself was not involved but that there was considerable effusion into the cellular tissue of the dorsum of the hand, which was dome-shaped and boggy, a condition which might readily have been mistaken for chiragra. The knee was swollen, red, hot, and tender but contained no fluid. On the following day the inflammation in the left knee subsided and the left elbow and the right knee were attacked. The temporo-maxillary, sacro-iliac, and sterno-clavicular articulations were not implicated. The patient was placed on full doses of salicylate of sodium, first of the synthetic and then of the natural salt, but without amelioration of the symptoms, the temperature ranging from 100° to 102° daily for many weeks. There was no cardiac complication and no pericardial rub or effusion could be detected. There was no tonsillitis and there was no history of syphilis, gout, or alcoholism. A gonorrhœal history was suspected but the patient denied any attack past or present and squeezing the urethra gave a negative result. The urine was of specific gravity 1020, acid, and contained no albumin. No flocculi were at any time observed in it. There was a history at the age of 22 years of an attack of acute rheumatism of some weeks' duration. The œdema of the hand continuing the fingers were carefully examined but no abrasion or wound could be detected and the temperature was not of a hectic type. The eyes were treated with boric acid lotion and a simple ointment but without improvement in their condition, and on Oct. 7th, in addition to the conjunctivitis, there was much ciliary congestion. The patient having derived no benefit from the salicylates was given first aspirin and then iodide of potassium in full doses, but again without benefit. On the 10th, there being effusion into the right knee-joint, it was aspirated and the fluid submitted to Dr. R. G. Hebb, who reported that no micro-organisms were found in the films and that there was no growth in any of the media after four days. On the 18th there was a renewed attack of acute purulent conjunctivitis of the left eye, for which Mr. G. Hartridge prescribed a 5 per cent. solution of argyrol, the application of which promptly relieved the inflammation. The conjunctival secretion was examined by Dr. Hebb but no gonococci were found. The patient had several subsequent attacks both of conjunctivitis and arthritis of gradually decreasing severity and he was discharged on Nov. 15th, relieved of all his symptoms.

Remarks by Dr. MURRELL.—This case of multiple arthritis presented many points of interest and much difficulty was experienced in arriving at a definite diagnosis. In favour of its being acute rheumatism was the history of a previous attack, presumably rheumatic in origin, although on that point there was no positive evidence. Against this theory was the absence of an initial tonsillitis, the rebelliousness to the salicylates, the cellulitis of the dorsum of the hand, and the freedom from cardiac complications. The diagnosis of gout was not seriously entertained and, apart from other considerations, the duration of the attack negatives that view. From the first a suspicion was entertained that it was a gonococcic infection and the effusion into the tendon sheaths strongly supports that view. The absence of a urethral discharge cannot be held to overweigh the general evidence in favour of that theory. The fact of gonococci not being detected in the fluid from the knee-joint cannot be regarded as conclusive and it is probable that the conjunctival secretion was examined too late in the progress of the case to carry much weight. It will be remembered that gonococci in the ophthalmic secretion were discovered by Darier in 1889 and demonstrated by Deutschmann in the fluid from the inflamed joints in 1890, but it can hardly be expected that they should be found in every case. The probabilities are that this was a true case of conjunctival arthritis, the conjunctivæ being inoculated with an attenuation of gonococcus. How the infection took place it is needless to discuss but the probabilities are obvious. Although the synovitis of gonorrhœa is usually the result of the absorption of morbid products from the urethral mucous membrane, there is no reason why the conjunctival mucous membrane should not afford equal facilities. A gonorrhœa need not of necessity be urethral in origin. Mr. R. Clement Lucas[1] has recorded a series of cases which show that ophthalmic rheumatism may attack infants either as an acute arthritis, accompanied by much pain, swelling, and redness, or as a subacute synovitis with effusion. The original ophthalmia may be due to an inoculation from the vaginal discharge of the mother at the time of birth or it may take place accidentally from infected towels or in some similar manner. It is notable that in this case the interval between the appearance of the conjunctivitis and the subsequent arthritis was only a few hours. In the infantile cases the joint affection develops about the end of the second week after conjunctival infection.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

An Analysis of 99 Cases of Inoperable Carcinoma of the Breast treated by Oöphorectomy.

A MEETING of this society was held on Jan. 24th, Mr. A. PEARCE GOULD, Vice-President, being in the chair.

Mr. HUGH LETT said that although removal of the ovaries for inoperable carcinoma of the breast had fallen into disfavour and was but seldom practised at the present time, it appeared to be worthy of a further trial in certain cases; for though a cure was not to be hoped for the operation in a considerable number of cases had been followed by a marked improvement in the patient's condition, both general and local. Of 99 cases thus treated there was very marked improvement in 23·2 per cent. and distinct though less marked improvement in 13 other cases—that is, 36·4 per cent. of all cases operated upon were materially benefited by the operation. If the patients who were more than 50 years old were omitted, of the remaining 75 cases 29·3 per cent. showed very marked improvement and nine others showed distinct improvement—that is, 41·3 per cent. were benefited by the operation. In successful cases the benefit had been great and was mainly shown in relief from pain, marked improvement in health, diminution or even disappearance of the growth, healing of ulcers, and prolongation of life. In no case had a "cure" resulted with one possible exception. In 32 of the 36 cases which had been benefited by this treatment the progress of the case from oöphorectomy to the recrudescence of the disease or date of death was recorded. In one case the patient was still alive and well though five years had elapsed since the operation was performed. The duration of the improvement was not very often stated but in 15 cases the improved condition of the patient was maintained for more than 12 months and four other patients

[1] Transactions of the Royal Medical and Chirurgical Society vol. lxxxii., 1899.

had good health for four and a quarter years or more. If a growth which was fixed and inoperable before oöphorectomy became smaller and moveable after the operation it was advisable to excise it as soon as the resulting improvement ceased to be definite. The removal should be very freely carried out, as it was probable that a certain number of cancer cells still remained in the immediate neighbourhood of the obvious growth, in the tissues which, though now apparently free, were at one time definitely involved; for in many of the cases in which the disease had completely disappeared after oöphorectomy it had subsequently reappeared in the same situation. The most favourable age of operation was from 45 to 50 years; in relatively young patients it should be given a further trial, but after 50 it was rarely worth doing. The fact that the patient had passed the menopause did not contra-indicate the operation. Secondary growths in the viscera contra-indicated the operation; rapidity of growth or an early recurrence after the primary operation made the prognosis unfavourable. The mortality in this series of cases was high, a little over 6 per cent. It should be noted, however, that the actual cause of death in several of these cases might be regarded as accidental; in two the fatal issue was due to pulmonary embolism and in one to acute mania. The changes which had followed oöphorectomy in the successful cases were still unexplained but it was possible that a morbid variation of the ovarian secretion might be one of the predisposing causes of cancer of the breast and that when the malignant changes had once begun their further development might be favoured by this secretion, and in these cases removal of the ovaries might meet with success if the disease had not already advanced too far. Carcinoma not infrequently developed in a breast which was already the site of chronic mastitis and it might be that there was a connexion between the secretion of the ovary, one or more of the varieties of chronic mastitis, and mammary carcinoma.

Mr. W. BRUCE CLARKE showed a case of a woman five years after oöphorectomy for inoperable cancer. In 1895 the patient had some bloody discharge from the nipple but no evidence of growth. In 1897 a small nodule was detected and removed and three months later the whole breast was removed and the axilla was cleared out. The growth on section proved to be a duct cancer. In 1898 the posterior triangle became involved and the growth was removed from this situation. In 1899 a further recurrence took place in this situation and the growth was again removed. In November, 1899, the growth had again recurred and involved the right side of the chest. Oöphorectomy was now performed. The pain, which had been a marked feature, rapidly diminished; the growth shrivelled in six weeks and had remained in about the same condition till the present time, some five years after the operation. This was the most successful case that had come under his own observation but in all the cases upon which he had operated some improvement had followed the operation. He never used this method except in inoperable cases.

Mr. J. STANLEY BOYD said that the conclusions which he had drawn from a smaller number of cases coincided with those of Mr. Lett. He was of opinion that the chronic cases were those which gave the best results. In one of his own cases the cancer of the breast had existed four and a half years before the oöphorectomy was performed and the patient had now lived 12 years since the operation. In Dr. Herman's case the cancer had existed for six and a half years before the operation of oöphorectomy and the patient lived 12 years. The cases reported by Watson Cheyne, Beatson, and Edmunds all showed the same chronicity in the primary growth or the greater resistance of the patient to the growth. He did not think oöphorectomy as a primary operation was advisable but he had in two or three instances used the combination of methods—viz., removing the breast and the ovaries—with results which he did not think could have been obtained by the removal of the breast alone.

Mr. JONATHAN HUTCHINSON pointed out how difficult it was to obtain evidence with regard to the duration of carcinoma of the breast. He referred to the case of a most intelligent woman who had a large cancer of the breast in which the growth was stated only to have been present for a week. He then referred to cases in which carcinomatous growths had spontaneously disappeared. He thought that no time-limit could be fixed with regard to the recurrence of carcinoma of the breast and mentioned the case of a woman from whom he had removed the breast and the growth only returned ten years after the removal. The patient died 11 years after the operation.

Dr. G. E. HERMAN said that the paper showed two very important points—viz., that those cases did best when operation was performed about the menopause and that the treatment with thyroid gave beneficial results.

Mr. W. MCADAM ECCLES said that there were three points to which he would allude. First, he attached considerable importance to the nature of the carcinoma, for the variation in the rapidity of growth was considerable; secondly, he thought that much might be learned from the microscopical examination of the ovaries removed; and, thirdly, the examination of the shrunken growth was important and so far as he knew only one such case had been examined. He mentioned a case in which oöphorectomy had been performed for extensive cancer in which all the nodules atrophied except for one or two small points. The patient lived for 26 months after the oöphorectomy and 35 months after the primary growth had been removed. This patient had been the subject of a most violent "nerve storm" after the oöphorectomy but recovered completely in about ten days.

Mr. PEARCE GOULD pointed out the fallacy of the statistical method of collected cases for only the more successful ones were published. His experience of the results of this operation had not been so favourable as that of Mr. Bruce Clarke and he had seen but one case with a striking result. In this instance rapid diminution of the growth took place but the patient unfortunately died from intestinal obstruction. Sections of the atrophied growth showed considerable fibrosis and atrophy of the cell elements. He never felt able to press the operation on a patient whilst the knowledge of the nature of cancer was so uncertain. He had not infrequently seen arrest of the disease without any operation. It was clear that there were physiological means by which the disease could be arrested and he looked forward to the time when these physiological means would be known and rightly applied.

Mr. LETT replied.

MEDICAL SOCIETY OF LONDON.

Discussion on Hæmaturia.

A MEETING of this society was held on Jan. 23rd, Mr. JOHN LANGTON, the President, being in the chair.

Dr. A. E. GARROD, in opening the discussion, said that although the presence of blood in the urine was often a symptom of great diagnostic value the interest and importance which attached to it were almost entirely clinical. It raised no abstruse pathological problems as did the presence in the urine of products of deranged metabolism, with regard to which the kidneys merely played the part of excretory organs, whereas they had their origin in morbid processes behind the renal barrier. In this respect the two very similar conditions hæmaturia and hæmoglobinuria stood in conspicuous contrast to each other. He next dealt with the diagnosis of hæmaturia and said that, as a rule, this gave rise to but little difficulty; occasionally the differentiation of hæmaturia from hæmatoporphyrinuria presented some difficulty if the urine rich in hæmatoporphyrin happened to contain albumin. The microscope would usually serve to remove any doubt. Spectroscopic examination did not supply so delicate a test as was sometimes supposed. If the blood pigment in the urine were always present in the form of oxyhæmoglobin it would be a different matter, but the band in red of methæmoglobin was not nearly so distinct as that of the latter pigment when dilute solutions were examined. The port-wine coloured urine rich in hæmatoporphyrin often showed a pair of absorption bands which closely resembled those of oxyhæmoglobin. Dr. Garrod then dealt with the chemical tests for blood pigment and stated that with the exception of Teichmann's hæmin-crystal test the tests were not so satisfactory as might be wished but they served very well in practice. The ozonic ether and guaiacum test was one of extreme delicacy and the failure to obtain the blue rings, at any rate, afforded most satisfactory evidence of the absence of blood. The microscopical characters of the urine from cases of hæmaturia were then considered and perhaps one of the most definitely diagnostic objects which could be found was the ovum of bilharzia hæmatobia. The presence of tube casts, of renal epithelium, or of fragments of tumours was of the greatest diagnostic importance. He then alluded to a definite group of cases of hæmaturia occurring

as an isolated symptom in infants in which the cause was the presence in the urinary passages of crystals of uric acid. A still more important cause of hæmaturia in the early months of life was infantile scurvy and he stated that blood was present in the urine at some period of the disease in the majority of such cases. The hæmaturia in these cases was in no way proportionate to the severity of the disease. In some cases it was an isolated symptom. Passing over such causes as nephritis and renal and vesical calculus Dr. Garrod next dealt with cases of hæmophilia in which hæmaturia had occurred. In other cases hæmaturia was caused by eating rhubarb and this occurred in some cases after a large amount had been consumed, in others when only a small quantity had been taken. He quoted several instances of this form of hæmaturia. Among the rarer forms of hæmaturia the origin of which was quite obscure might be mentioned the cases of idiopathic or congenital hereditary and family hæmaturia, no less than 12 members of one family being affected. The hæmaturia persisted for many years but in some cases it would cease but would recur or increase in a paroxysmal manner. Some obscure cases of hæmaturia had been described in which when an operation was performed no conspicuous lesion was found. In one case reported by Mr. Hurry Fenwick a localised interstitial change was present. Among conditions in which hæmaturia was the sole symptom reference was made to that due to bilharzia hæmatobia which was not very rarely met with in the young men who had returned from South Africa. He then referred to the hæmaturia in cases of parenchymal nephritis and that which occurred in granular kidney, movable kidney, and lastly to that which occurred in association with prostatic diseases. In conclusion, he referred to the term "renal epistaxis" which suggested that the bleeding might occur from the kidney, as it did from the nasal mucous membrane, without any gross lesion.

Dr. H. E. BRUCE PORTER mentioned the case of a man, aged 50 years, who had two attacks of hæmaturia which were definitely connected with the taking of a large quantity of asparagus. In this case no oxalates were present.

Mr. T. H. KELLOCK said that he had seen hæmaturia follow a papillomatous growth in the kidney. He mentioned the case of a young man with a tumour in the left kidney. This was removed and it was found that the whole pelvis was filled with a papillomatous growth. Papilloma of the bladder gave rise to more severe hæmaturia than almost any other condition. He did not believe that hæmaturia was a common symptom of renal sarcoma. He was of opinion that a calculus in the cortex of the kidney more often gave rise to hæmaturia than a large calculus situated in the pelvis.

Dr. J. H. BRYANT referred to the great diagnostic value of the cystoscope. In one case of a man, aged 40 years, with profuse hæmaturia and enlargement of the right kidney, it was found on examination that a large villous growth surrounded the orifice of the right ureter and so far gave rise to obstruction and hydronephrosis. The patient made a complete recovery after the removal of the growth from the bladder. In a second case blood could be seen oozing from the left ureter. Bacteriological examination was also of value in such cases.

Mr. R. H. J. SWAN referred to the value of the cystoscope and the separator. Even in cases of profuse hæmaturia it was often possible to make a diagnosis in a fluid medium in the bladder which was not quite clear. A rapid examination often sufficed to make the diagnosis obvious. He said that in tuberculous cystitis hæmaturia might be the only symptom. He related the case of a small boy whose bladder had been opened under the supposition that a papilloma was present. Nothing was found but by subsequent examination with the cystoscope a tuberculous condition was seen. He thought that hæmaturia as the only symptom in cases of enlarged prostate was very rare.

Dr. F. J. POYNTON referred to hæmaturia occurring in infants suffering from scurvy without any other symptoms. Hæmorrhage from the kidney occurred in cases of malignant endocarditis, partly due to infarcts but also due to a toxic nephritis. In one instance in which he had injected a cat with a virulent growth of streptococci the animal had developed a nephritis from which it completely recovered and when killed subsequently the kidneys were found to be perfectly normal.

The PRESIDENT referred to the rough clinical tests for the diagnosis of the source of hæmorrhage—viz., that when intimately mixed with the urine the blood probably came from the kidney or ureter when following the passage of clear urine from the bladder, and when at the commencement of micturition as coming from the urethra. He referred to the case of a man with all the symptoms of stone in the kidney. He explored the kidney but was unable to find any calculus. The man made a complete recovery and was perfectly well 18 years later. He thought that hæmaturia was more commonly the result of small calculi than of large ones.

Dr. GARROD replied.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Instruments.—Bony Deposits following Injury. — Cerebellar Abscess. — Acute Labyrinthitis. — Typhoid Fever.

A MEETING of this society was held on Jan. 19th, Dr. JAMES BARR, the President, being in the chair.

Dr. W. BLAIR BELL exhibited and demonstrated the use of the following instruments: (1) Combined Peritoneum Forceps and Wound Retractor; and (2) Complete Infusion Apparatus, with improved Venous Cannula.

Mr. ROBERT JONES and Dr. DAVID MORGAN presented an Analysis and Radiographic Illustrations of 16 cases of Bony Deposits following Dislocation of the Elbow-joint under their observation. These deposits had followed simple dislocation, unaccompanied by fracture, and were not associated with myositis ossificans progressiva. They differed from myositis ossificans due to local irritation and their occurrence in presence of a fracture was not associated with callus. The periosteum was believed to be the origin of these bony deposits. A series of radiographic lantern slides depicted their growth, from slight shadows to dense bony formation. The diagnosis and the prognosis were discussed and microscopic slides were shown to demonstrate their true bony nature as distinct from calcareous changes.

Mr. W. T. CLEGG read notes of a case of Cerebellar Abscess which occurred as the result of acute ear trouble. The clinical history of the case was given and the differential diagnosis between temporo-sphenoidal and cerebellar abscess was discussed. An operation had been performed but without relief to the patient. At the necropsy a large abscess was found in the right lateral lobe of the cerebellum, the infection having travelled from the ear along the sheath of the auditory nerve. There was no meningitis.

Mr. CLEGG also related a case of Acute Labyrinthitis in a child, two years and eight months of age, in which the symptoms closely resembled those of meningitis. After recovery deafness persisted. There had been no discharge from the ear.

Dr. NATHAN RAW read a paper on Some Points in the Diagnosis and Treatment of Typhoid Fever based on an observation of 362 cases treated in hospital during the last 16 years. He referred in detail to the great difficulties in diagnosis which many cases presented in the early stages of the disease and discussed the value of Widal's reaction as an aid to the practitioner. Hæmorrhage and perforation were the two most formidable complications and a careful *résumé* of the symptoms of perforation of the intestine was given as it was highly important to be able to diagnose its immediate onset so that prompt operative measures might be adopted. In his opinion the treatment of the future would be directed towards reducing the virulence of the bacilli and the onset of toxæmia on the lines suggested by Dr. A. E. Wright or by the introduction of a serum. The cold or continuous bath treatment undoubtedly in other countries gave better results than any other, but he believed it would be some considerable time before it was generally adopted in this country in the treatment of typhoid fever.—Dr. W. CARTER considered Brieger's suggestion of feeding patients suffering from typhoid fever with pure peptones good and he had carried it into practice for many years. Commenting upon Widal's reaction, he mentioned two cases in which it proved misleading. —Dr. W. B. WARRINGTON considered that even when much care was taken the serum reaction was not devoid of ambiguity and the observer was from time to time left in doubt as to the positive or negative nature of the reaction.—Dr. N. E. ROBERTS was of opinion that the mortality of enteric fever in Liverpool, when treated in hospital under modern conditions, would average about 12 per cent. He based this on his experience of close upon 2500 cases treated at the city hospitals since 1892. The mortality of this disease was greatly influenced by the class of patient under treatment, and as illustrating this point Dr. Roberts said that he had never lost

a nurse or any member of the hospital staff from enteric fever at the Grafton-street or Parkhill Hospitals since he joined those institutions in 1892.—The PRESIDENT, Dr. J. HILL ABRAM, Dr. T. R. BRADSHAW, Dr. A. G. GULLAN, Dr. C. J. MACALISTER, Dr. R. S. ARCHER, and Dr. R. J. M. BUCHANAN also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on Jan. 6th, Dr. H. C. EARL, the President, being in the chair.

Professor O'SULLIVAN (for Dr. ROY S. DOBBIN) showed specimens from a case of Extensive Anæmic Infarction of the Liver. The case was one of puerperal eclampsia, with jaundice. A large gall-stone was impacted in the upper end of the gall-bladder. The smaller branches of the hepatic artery showed an extensive degeneration of the walls, commencing in the muscle cells of the middle coat, and accompanied by a similar change in the walls of groups of capillaries in the neighbourhood of the branches of the artery. The degenerated material took on Weigert's fibrin stain deeply and gave none of the amyloid reactions. Hyaline thrombi were present in some of the arteries. The walls of the hepatic and portal veins were healthy. Some of the portal veins inside the infected areas were thrombosed.

The PRESIDENT and Mr. R. C. B. MAUNSELL showed an Endothelioma of the Uterus.—Professor O'SULLIVAN expressed the opinion that the diagnosis was not justified in the present state of knowledge in regard to endotheliomata unless the transition from the ordinary endothelium of the lymph space to the tumour endothelium could be established.—The PRESIDENT agreed with Professor O'Sullivan's remarks and admitted that there were many parts of the tumour from which nobody could possibly establish a diagnosis.

The PRESIDENT showed a large Myoma of the Rectum which was removed by Dr. F. M. Golding, of Headford, from a woman during parturition. The tumour measured three and a half inches in its longest diameter by two and a quarter inches in its shortest. It presented some patches of calcification near its surface. It was attached to the wall of the rectum by a thin membrane.—Dr. R. TRAVERS SMITH asked if there was any possibility of it being a uterine tumour which had found its way out per rectum.—The PRESIDENT said that he did not think it was a uterine myoma because he believed that if a patient had had a myoma like that ulcerating into her bowel she would have complained about it. Dr. Golding had also given a distinct history of its having a membranous attachment which would not have been present if the tumour had ulcerated its way into the rectum.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on Jan. 17th, Sir William J. Collins, the President, being in the chair.—Dr. J. G. Garson read the notes of a case of a Double Fracture of the Right Clavicle which resulted in a civil action for damages.—The President recalled Sir Robert Peel's fatal injury which was too painful for examination.—Dr. J. Howell Evans insisted on the importance of the two fulcra upon which the clavicle rested.—Dr. Garson also gave a Demonstration on the Development of Invisible Finger-prints. He suggested that vital evidence was often lost by disturbing the environment of a crime before it had been skilfully investigated.—Mr. A. Douglas Cowburn opened a discussion on the Law relating to the Criminal Responsibility of the Insane. The question was primarily one for the jury. It was frequently impossible to apply the knowledge-test of right and wrong, as required by the answers of the judges in 1843. Again, men undoubtedly insane had been convicted as criminals and although substantial justice was obtained by the intervention of the Home Office such methods of trial were undesirable. The laxity of medical definitions and hypotheses led lawyers to be firm in adhering to their rules. "Moral insanity" rarely existed without intellectual derangement and many crimes alleged to be the result of sudden impulse had been, in fact, carefully planned out. Medical evidence must be more definite and precise than was the usual case. Any change of rule must have wide moral support and must not make it easier for criminals to escape unpunished. It was better to leave "insanity" undefined and to agree that no act done by a person in a state of insanity should be punished. The vast majority of cases presented little diagnostic difficulty to the expert alienist and to him the decision must be left. The law must apportion its standard of responsibility to each individual case. Criminals—i.e., those convicted of one of the 82 indictable offences—might thus be classified into five relative groups: (1) the professional criminal; (2) the habitual criminal with a bad police record; (3) the occasional criminal, the victim of temptation; (4) the insane criminal, who should be exempt from punishment; and (5) the weak-minded criminal, who should receive medical treatment rather than punishment. The foregoing principle actually obtained in the convict cell but not in the courts.—Dr. James Scott regarded the recommendation of the jury "to mercy" as to some extent a recognition of the class of the "feeble-minded."—Dr. Ernest W. White recognised a slope and not an angle in the gradation of sanity to insanity; further, one fixed delusion proved general mental disease. Both he and Dr. T. Outterson Wood maintained that each case must be considered individually as it arose.—Mr. John Troutbeck expounded Jeremy Bentham's "Theory of Rewards and Punishments."—The President, in concluding the discussion, insisted that the test of guilt was not within the sphere of cognition but that of volition. Wundt had, at the close of his theory of psycho-physical parallelism, allowed that conduct was determined by personality; motives arose externally, causes internally. There was, and must be, some mental calculus in considering these problems involving responsibility. The questions at the back of our minds were, he submitted, Had the prisoner the power of choice? Could he act upon it? Were his choice and act in accordance with the general moral sanction of the time and place in which he lived and with the legal sanction prescribed by the legislature?

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Dr. T. Vincent Dickinson, the President, being in the chair.—Dr. J. D. E. Mortimer read a paper on the Anæsthetisation of Children. After referring to various practical details he pointed out that the prone or latero-prone positions were apt to embarrass the breathing, especially in rickety children, and that in cases of empyema the child should never be turned on the unaffected side. In giving chloroform the induction of anæsthesia should be gradual but not too prolonged and there ought to be a free admixture of air. The lint, if such be used, should never be applied closely to the face; by so doing it was certainly possible to anæsthetise or rather narcotise a patient, using a very small amount of chloroform, but the method was both inconvenient and dangerous. Coroners and juries appeared to be under the impression that the amount of chloroform used was a measure of the amount inhaled and that the production of anæsthesia with a small quantity indicated a skilful administration, whereas the reverse was often the case.—Mr. A. F. Penny read a paper on two cases of a Hitherto Unrecorded Complication of Pregnancy. The first case was seen by him in consultation with Mr. C. A. Morris and subsequently, on the removal of the patient to the Grosvenor Hospital, by the other members of the staff there. The second case was seen by Mr. Morris and also by Dr. Seymour Taylor. Both patients recovered, although they presented very alarming features and both miscarried, one at six and a half months and the other within a fortnight of full term. The prematurely born child survived for three hours; the other child had to be delivered by forceps and was born dead with the cuticle peeling. The two cases simulated typhoid fever very closely. In the first of the two the blood was examined twice for Widal's reaction but with a negative result. In this case the illness began with a rigor on June 25th and the woman's temperature was found to be 103° F. There was constipation for the first week but afterwards the bowels were relaxed and the stools were distinctly typhoid in character. Two days before she miscarried the temperature rose to 104·8° and on July 7th, just before labour pains began, it was 103·6°. Immediately labour started it dropped to 97° and remained subnormal afterwards for two or three days. There was no further pyrexia. In the second case there was constipation throughout. When first seen by Mr. Penny on July 2nd the woman complained of very severe pain in the upper part of the right

lumbar region. The abdomen was very distended and tender and on the right side the colon was enormously distended and overlapped the enlarged uterus. Her temperature varied between 100° and 102° until July 8th, when it rose to 103·6°. On July 10th, an hour or two before labour pains began, it dropped to 101·2°. Immediately the pains commenced the temperature was found to be 97°. It remained subnormal for three days, when it reached the normal standard and there was no further pyrexia. Mr. Penny could offer no explanation of the phenomena.—Dr. J. Anderson read a paper on the Treatment of Various Diseases by Light and gave details of several cases in which he claimed that a successful result had been obtained by this means. The patients suffered from gout, rheumatism, various neuralgias, insomnia, and anæmia.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held in Manchester on Jan. 20th, Sir William J. Sinclair, the President, being in the chair.—The following officers were elected:—President: Dr. D. Lloyd Roberts. Vice-Presidents: Sir William Sinclair, Dr. W. Walter, Mr. Owen Bowen, Dr. Arthur J. Wallace, Dr. J. B. Hellier, Dr. A. C. F. Rabagliati, Dr. John W. Martin, and Mr. Percival E. Barber. Honorary treasurer: Dr. E. Octavius Croft. Honorary general secretary: Dr. W. E. Fothergill.—Mr. G. A. Hawkins-Ambler showed two specimens of Apoplexy of the Ovary. The first was from a patient, aged 41 years, who had violent abdominal pain during influenza two weeks after a profuse menstrual period. The enlarged uterus emitted a sanious discharge. The left ovary was turned into a blood cyst of the size of a hen's egg—a shell of altered ovarian tissue containing a chocolate-coloured putty-like mass. The right ovary was cystic and adherent. The second specimen was from a patient, aged 35 years, who during the previous year had had various attacks of pelvic peritonitis. An ovoid cyst of the size of an orange was found adherent to the uterus on the left, to the rectum, and to the colon. It was filled with blood clot and fibrin and represented the left ovary.—Dr. Hellier described two cases illustrating the production of Uterine Souffle. One was an instance of uterine myoma of the size of a three months' pregnancy which caused a loud bruit together with a palpable thrill. After removal of the uterus injection showed the presence of a large artery and a large venous sinus on its right side. The other case was one of retroperitoneal sarcoma which pushed the uterus up so as to form a visible prominence on the abdomen extending three and a half inches above the pubes. Over this there was a soft souffle which disappeared after the enucleation of the tumour.—The President (Dr. Lloyd Roberts) showed a Liver Enlarged by Metastatic Deposits, the primary lesion being cancer of the pancreas. A lobe of the liver, divided from the main mass by a deep sulcus, extended into the right side of the pelvis. This caused a difficulty in diagnosis, as during life the condition suggested the presence of a separate tumour of pelvic origin co-existent with enlargement of the liver.

LARYNGOLOGICAL SOCIETY OF LONDON.—At the annual meeting of this society held on Jan. 13th the following officers were elected for the year 1905:—President: Mr. Charters J. Symonds. Vice-Presidents: Dr. W. Milligan, Dr. F. Willcocks, Dr. J. B. Ball, and Dr. G. William Hill. Council: Dr. L. H. Pegler, Dr. J. Walker Downie, Dr. P. McBride, Mr. W. R. H. Stewart, Sir Felix Semon, and Dr. E. Furniss Potter. Honorary treasurer: Mr. H. B. Robinson. Honorary librarian: Dr. StClair Thomson. Honorary secretaries: Mr. P. R. W. de Santi and Dr. H. J. Davis.—At the ordinary meeting the following cases and specimens were shown:—Dr. StClair Thomson exhibited a case of Epithelioma in a man, aged 50 years, in whom laryngo-fissure was performed and there was no recurrence after six months. He also showed a boy, aged 14 years, in whom Tracheotomy was performed for Extreme Stenosis, the larynx being extensively ulcerated and the cords fixed in the middle line. There was marked improvement after the operation and the diagnosis rested between tubercle, lupus, and congenital syphilis.—Mr. de Santi showed for diagnosis a case of Swelling of the Left Arytenoid Region in a woman, aged 35 years. The diagnosis was considered to be either tubercle or malignant growth.—Dr. H. Tilley showed a case of Tracheal Obstruction.—Sir Felix Semon showed two cases: (1) Pharyngeal and Laryngeal Nystagmus in a case of probable tumour of the pons; and (2) a case of Inflammatory Œdema of Obscure Origin, affecting the posterior part of the larynx, in a man, aged 45 years.—Dr. H. W. Fitzgerald Powell showed a case of Epithelioma of the Palate, Tonsil, Tongue, and Cheek and suggestions were invited as to the effect of the x rays in such a case. The opinion generally expressed was that the x rays would not be of much value in such cases.—Mr. F. H. Westmacott showed a case of Ulceration of the Soft Palate which had been operated upon frequently yet was perpetually recurring. It was not influenced by iodide of potassium.—Mr. C. A. Parker showed a case of Symmetrical Enlargement of the Thyroid.—Dr. Smurthwaite exhibited a beautiful series of Paintings in Oil indicating Diseases of the Throat and Larynx.—Dr. D. R. Paterson showed a Pair of Laryngeal Forceps for use by the direct method.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 20th, Dr. J. S. Risien Russell, the President, being in the chair.—Dr. Lewis A. Smith opened a discussion on the Management of a case of Glycosuria. He advised that a patient seeking advice who was passing sugar in the urine should not be told that the condition was diabetes. Though advances had been made in the knowledge of the parallel conditions of glycosuria yet they were in the dark now as formerly as to the cause of the condition. Various pathological conditions of various organs seemed causal of glycosuria; it probably was the case that some loss of balance of function of the body as a whole resulting from disease of the brain, the pancreas, the liver, or the kidney could, and did, so alter the metabolism that the sugar was unburned and passed from the body as sugar. Where exactly this sugar was transformed was unknown. He said that the only sure and true test for sugar was fermentation. Stress was laid on the fallacies common in chemical testing and he illustrated those remarks by the anxiety caused sometimes when on adding the perchloride of iron solution to a urine containing sugar a red reaction resulted. Yet that reaction was due to salicylates taken by the patient and not to the presence of diacetic acid. The presence of even a large quantity of sugar in the urine was not of itself warrant for a grave prognosis, for eight years ago he saw a man who had dry gangrene of two toes with much sugar in the urine who recovered, grew fat, and worked hard. The presence of diacetic acid, a resultant of autoproteid metabolism, was the best guide as to the severity of a case and indicated the near approach of coma. For this sodium bicarbonas should be given in doses of about two ounces daily. In the beginning of attending a glycosuric patient care should be taken not to change the previous diet suddenly, for deaths had been recorded apparently as a consequence. Drugs should be avoided until the full reduction of the sugar had been attained by diet alone, then drugs might be given.—A discussion followed, to which Dr. Lewis Smith replied.

ROYAL MEDICAL SOCIETY, EDINBURGH.—A meeting of this society was held on Jan. 13th at which Dr. John Thomson delivered an address on Congenital Pyloric Spasm. He began by going into the history of the subject, stating that before 1896 very few cases had been described but that after that year the number of cases had steadily grown. He then discussed the pathology of the condition and its causation. In this connexion he gave two theories—the first, that it was due to a simple primary hyperplasia and the second, to which he himself leaned, that it was due to a secondary overgrowth following overwork. He next treated the question of the symptoms and diagnosis, mentioning the explosive vomiting, the absence of the signs of dyspepsia, the smallness of the motions, the general emaciation, and the prominence of the stomach and pyloric thickening. After describing the course of the disease, he went fully into its treatment, both medical and surgical, mentioning such operations as pylorectomy, stretching, and gastro-enterostomy. In the course of his address Dr. Thomson exhibited slides of numerous cases.—Dr. A. C. Geddes moved, and Dr. L. S. Milne seconded, a vote of thanks.—Dr. H. D. Shepherd then read a dissertation on the Evolution of the Limbs. He prefaced his paper by giving an account of the line of the development of the vertebrates, saying that the first appearance of a well-marked limb occurred in the suaropsida. He then selected the newt, the frog, and a mammal as representing three great stages in the development of the limbs. Next he compared the hind limbs in these three groups, taking the newt first and pointing out the absence of torsion in the femur. Of the frog he said that

here a bending of the head of the femur, a sloping of its condyles, a rotation of the ankle, and other advantageous changes could be detected. He concluded by going fully into various interesting points of mammalian comparative anatomy.—Mr. D. M. Barcroft proposed, and Mr. T. B. Johnston seconded, a vote of thanks.—Dr. J. M. Graham then read notes of three cases of Hysteroparalysis.

BURNLEY AND DISTRICT MEDICO-ETHICAL ASSOCIATION.—A clinical meeting of this society was held on Jan. 5th, Dr. A. M. Sinclair being in the chair.—Dr. A. Donald read a paper on Puerperal Septic Infections. He laid especial stress upon injuries to the perineum and to the vagina as causes of sepsis. He had found the power for repair of these injuries to be defective and in many instances the wounded part was covered with a thin grey slough. He strongly advocated surgical precautions in all midwifery cases; not that such precautions would entirely obviate septic dangers but that they would materially lessen them. For treatment he deprecated curetting and hysterectomy—in the former case the danger of pushing vaginal septic material into a possibly otherwise healthy uterine cavity seemed to be great and in the latter to remove a probably unoffending organ seemed a crime. —A discussion followed in which Dr. J. Mackenzie referred to his earlier and his later experiences and remarked that many of the younger practitioners had no knowledge of puerperal sepsis.—Dr. R. C. Holt called attention to the remarkable statistics of some of the older practitioners who could show lists of cases attended where the death-rate was not 1 in 1000 and remarked upon their practice as he had seen it. He thought that the too free use of the forceps and the practice of Credé's method of expelling the placenta were responsible for many evils.—Dr. J. Gardner drew attention to the differences between women in towns and women in the country, more especially with regard to vaginal secretions.—Dr. G. S. Pullon, Dr. J. S. Wilson, Dr. W. Bird, and Mr. J. Hodgson also related their experiences.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held at the Medical Institute, Birmingham, on Jan. 18th, Dr. E. W. Wood White, the President, being in the chair.—Mr. H. G. Barling showed (1) a patient from whom he had successfully removed a Tumour of the Cerebrum; (2) a man who had been the subject of Migraine of many years' standing and who was successfully treated by the fixation of a moveable kidney; and (3) a specimen of Advanced Hydronephrosis in a Moveable Kidney removed from a woman, aged 50 years, who had suffered pain more or less for 20 years but more severely during the last 12 months. The other kidney was also freely displaced downwards but was not hydronephrotic.—Mr. L. P. Gamgee showed (1) a woman, aged 51 years, who for seven years had suffered constantly from very severe headaches which had resisted all ordinary forms of treatment (fixation of a right moveable kidney had resulted in complete disappearance of the headaches); and (2) a large Hydronephrosis removed from a woman, aged 40 years. The patient had suffered from a moveable kidney for 20 years and the hydronephrosis was apparently a direct result of the mobility. —Mr. Barling read a paper on Renal Mobility and its Treatment.

BRISTOL DISPENSARY.—The annual meeting of the subscribers to the Bristol Dispensary was held on Jan. 13th. The report stated that during 1904 the patients numbered 10,556, being a slight decrease compared with the previous year. The financial statement was satisfactory and showed a favourable balance of £10.

PHYSICAL VOICE-TRAINING SOCIETY.—A meeting of this society will be held on Wednesday, Feb. 1st, at 5.30 P.M., at the Medical Society's rooms, 11, Chandos-street, Cavendish-square, London, W. The Lord Bishop of Bristol will take the chair and the speakers will include Canon Barker, the Principal of King's College, and Dr. V. H. Wyatt Wingrave. The honorary secretary is Miss C. D'Orsey. Those who attended the breakfast given by that lady at Oxford on July 29th, 1904, and the subsequent meeting and others who are interested in the subject may be reminded that further particulars of the objects of the society will be found in THE LANCET of August 13th p. 502.

Reviews and Notices of Books.

An Atlas of Human Anatomy. By CARL TOLDT, M.D., assisted by Professor A. DALLA ROSA, M.D. Translated from the third German edition by M. EDEN PAUL, M.D. Brux. Sixth section: G, Neurology; H, the Organs of the Senses (Figs. 1124 to 1505 and Index. London and New York: Rebman. 1904. Pp. 746–956 and Appendix (pp. 30). Price 16*s.* 6*d.* net.

THIS handsome volume completes the translation of Professor Toldt's Atlas of Human Anatomy adapted to English and American international terminology. Five plates are devoted to diagrams of the structure of nerve fibres, cells, and terminal sensory organs. Figures 752 to 808 are devoted to the central nervous system, gross anatomy, development, and excellent schemata showing the connexions of the parts of the central nervous system one with another and with adjacent sense organs largely make up this part of the work. All the sketches are bold, clearly drawn, and every part is duly labeled, so that any student glancing over these pages can readily refresh his memory. The transverse, horizontal, and other sections of the brain are admirably drawn, while the diagrammatic representations of the continuation of the several tracts of the cord into the brain are particularly good, for after all it is a knowledge of the connexions between the several parts of the nervous system which is useful to the physiologist and the physician. We may refer particularly to Figs. 1225 and 1226 showing the course of the continuation of the posterior column of the cord, and Figs. 1227 and 1228 depicting the connexions of the eyeball and its muscles with the brain and medulla.

To the peripheral nervous system (Figs. 1240–1325), nearly 100 figures are given, many of them occupying a whole page. The sketches of the distribution of nerves to the viscera are particularly good and so are the delineations of the nerves to the hand, in fact, the plates in this part strike us as amongst the best in the whole Atlas. The sympathetic nervous system is dealt with in Figs. 1326 to 1333 and most excellent plates they are. The rest of the work is devoted to the organs of sense, the major part to the eye (Figs. 1334–1403), including its anatomy, structure, and development; the ear (Figs. 1404–1468); the nose (Figs. 1469–1481); while Figs. 1482 to 1505 are devoted to the skin.

In the notes by the translator in the Appendix a concise but lucid sketch is given of the newer views on the structure of the central nervous system. Numerous annotations occur, showing the differences between German and English nomenclature—e.g., cardiac plexus. English anatomists make a distinction between a superficial and a deep cardiac plexus which is ignored by Professor Toldt. The references regarding different terminology are chiefly to Quain and MacAlister.

Altogether the work is excellently translated, the printing is good, and the plates and figures are clear and distinct and well chosen. We think that this part will prove fully as useful as any of its predecessors. We congratulate both authors and publisher on the success of their endeavour.

The Chief Operations of Ophthalmic Surgery: A Practical Guide for Students. By HAROLD B. GRIMSDALE, M.B., B.C. Cantab., F.R.C.S. Eng., Assistant Ophthalmic Surgeon to St. George's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital. London: *The Medical Times.* 1904. Pp. 144. Price 5*s.*

THE operations given in detail in this little work include those for strabismus, ptosis, entropion, ectropion, tarsorrhaphy, lacrymal obstructions, enucleation, evisceration, cataract, glaucoma, iridectomy, peritomy, and corneal cornea. The author has had considerable experience in the

wards and operating theatres of St. George's and the Royal Westminster Ophthalmic Hospitals and therefore writes with authority. The account given of each operation is sufficiently accurate, though in giving three or four methods it would have been more serviceable to the student if the author had indicated the particular conditions rendering one plan superior to another. It is convenient to the student to have in compact and portable compass the various proceedings that have been suggested for the relief of certain diseases, defects, and deformities but we demur to the statement made in the introductory chapter that "most text-books on ophthalmology give up a very small part of their space to the somewhat important branch of operative surgery." We have looked at several of the recently published treatises, such as those of Juler, Berry, Norris and Oliver, Fuchs, Swanzy, Ball, and others, and find that many pages in each of these works are devoted to operative proceedings, though the accounts are distributed under different headings and are not collected together as in Mr. Grimsdale's treatise. In the account of Mules's operation it is stated that in "something like 20 per cent. of all cases the central stitch gives way and the globe emerges." Surely this estimate must include those cases in which the operation has been performed by unskilful hands. The failure is almost certain if too large a glass or silver globe is inserted, whilst if all traction is avoided it is generally successful. A small globe gives a very good *point d'appui* for a well-made artificial eye. The description of Maxwell's operation for shallow socket is very well given. Kronlein's operation for the removal of the outer wall of the orbit might have been introduced. The woodcuts, though intelligible, are very coarse; the text deserves to be illustrated better.

An Account of the Tapeworms of the Genus Hymenolepis Parasitic in Man, including Reports of Several New Cases of the Dwarf Tapeworm (H. Nana) in the United States. By BRAYTON H. RANSOM, Hygienic Laboratory Bulletin, No. 16. September, 1904. Washington: Government Printing Office. 1904. Pp. 131.

THIS publication contains a full account, from both the zoological and medical aspects, of the three representatives of the tapeworms of the genus hymenolepis, parasitic in man. The hymenolepis nana, the dwarf tapeworm of man and rats, is of small size and has no doubt been frequently overlooked owing to the diagnosis of its presence being dependent on the discovery of its eggs microscopically. About 100 cases have been reported in man. It was first described in 1845 by Dujardin in rats; then in man by Bilharz at Cairo in 1851. The Italian investigations showed that when the eggs are swallowed by white rats, the embryos hatch, bore into the intestinal villi, become transformed into an intermediate stage of cercocysts, and finally fall into the lumen of the intestine to become adults. A similar development is presumed to occur in man, although it is possible that some portion of the process of development both in man and rats may occur in some intermediate host such as an insect; this, however, is not yet determined.

The large majority of cases occur in male children between the ages of five and ten years. More cases develop in cities than in the country. Bad hygienic surroundings are especially liable to cause infection. The largest number of cases has been reported from Italy; and next to Italy from Columbia. The ileum is the part infected and in number the worms may vary from one to several thousand. Other parasites again may be present at the same time, whilst the infection may last from two months to two and a half years, perhaps even to five years or even longer. Clinically the symptoms are usually slight and may be absent altogether, although severe ones, such as persistent diarrhœa and epileptiform attacks, occasionally occur. The most frequent symptoms are abdominal pain with or without diarrhœa, convulsions of various sorts (frequently epileptiform), headache, and strabismus. Nasal and anal pruritus common in cases of other tapeworms are rare. Nervous symptoms seem to occur more especially in those patients predisposed to nervous disease. The local pathological changes are slight. The diagnosis rests on the discovery of the eggs.

In making the necessary research a very small particle of the fæces to be examined has simply to be rubbed up with a drop of distilled water on a glass slide, covered with a cover glass, and examined with a moderately high power. The eggs are very transparent so that they are likely to be overlooked unless care is taken. The characteristic appearance of these eggs is the presence of two distinct membranes, an inner one closely investing the embryo with filaments attached to its poles and an outer separated from the inner by a considerable intervening space. The treatment is by male fern which may have to be repeated several times. Prophylaxis consists in the avoidance of everything favouring the entrance of eggs into the mouth, the destruction of rats and mice, and the protection of food from contamination by their excreta, whilst children must be carefully prevented from putting into their oral cavities all the various objects which, soiled by these excreta, may carry the eggs.

The second worm, the hymenolepis diminuta, or flavopunctate tapeworm of man and rats, occurs by means of an intermediate host, the common meal moth being the most frequent. It gives rise to practically no symptoms and is diagnosed by the discovery of its eggs in the fæces. Here the outer membrane of the eggs has a radial striation, distinguishing it from the last, whilst the intermediate substance between the two membranes is more prominent, and there are no filaments at the poles of the inner membrane. In the treatment a simple cathartic is all that is necessary and the avoidance of all the various insects acting as intermediate hosts. The hymenolepis lanceolatus of geese and ducks has been recorded but once from man.

LIBRARY TABLE.

Électricité Médicale. By Dr. H. GUILLEMINOT. Paris: G. Steinheil. 1905. Pp. xii. + 656. Price 10 francs.—We think that an English translation of this book would well repay any trouble that it entailed. It is essentially practical and many interested in medical electricity would be only too glad to have a book such as this, which gives all the latest ideas of our French colleagues on the subject, without the trouble of translating it for themselves. The work is divided into three parts, the first of which is devoted to electro-physics. Apparently the time has not yet come when the preliminary training of medical men in electricity is such that this section can be dispensed with in works on medical electricity. The second part relates to the physiological effects of the various forms of electrical energy on living tissues. It includes the action of the different light rays which have taken such an important place in physical therapeutics. The action of the static machine current and currents of high frequency are dealt with very fully, as would naturally be expected in a book coming from a country where these agents are much more extensively used than they are here. The third section extends over half the volume and deals with the practical applications of electricity in diagnosis and therapeutics. This, of course, is the part of most interest to medical men. A novel feature of this section is the author's method of describing the treatment of each organ of the body under a separate heading. The part relating to diseases of the skin is worthy of special mention and will well repay any time that may be given to

its study. The book can be thoroughly commended. The publishers' work has been very satisfactorily done, the volume being of a convenient size and the printing and illustrations particularly clear.

The Transactions of the Hunterian Society, 1903-1904. Eighty-fifth Session. London: Headley Brothers. 1904. Pp. 85.—In addition to the usual lists and report about the society, which latter shows a satisfactory financial position, these Transactions contain Dr. J. F. Woods's oration on the Psychic Side of Therapeutics; Dr. W. Hale White's lecture on Some Clinical Considerations concerning Certain of the Rarer Forms of Enlargement of the Heart; the second Hunterian lecture on Pain: its Importance in Diagnosis and Tendency to Mislead, by Mr. A. A. Bowlby; and Dr. Paul C. Franze's paper on the Physiological Action of the Nauheim Bathing Wells and the Indications for their Use, chiefly in Circulatory Disorders. The reports of the cases and specimens shown on the clinical and pathological evenings are very interesting.

The Food of the Future: a Summary of Arguments in Favour of a Non-flesh Diet. By CHARLES W. FORWARD. With a Preface by ERNEST BELL. London: George Bell and Sons. 1904. Pp. 128.—In this little book arguments in favour of a non-flesh diet are set forth. In the preface Mr. Bell remarks that "in reality force of custom, appetite, and the desire for sensual indulgence is the only 'reason' for the inhuman habit [of flesh eating], if one may use the word where no reason enters at all." The book is stated to be for those "who are ready and waiting to climb off the purely physical sensuous plane, who long for some higher ideal than seems to satisfy the average man. It is to these the book may be helpful in showing that in following their better natures they have reason, and humanity also, on their side."

Home Nursing and Hygiene Handbook. By J. WALLACE ANDERSON, M.D. Glasg., F.F.P.S. Glasg., and GEORGE H. EDINGTON, M.D. Glasg., F.F.P.S. Glasg. Glasgow: St. Andrews Ambulance Association. 1904. Pp. 156. Price 1*s.* net.—This work is the official text-book of the St. Andrews Ambulance Association which is the Scottish organisation corresponding to the English St. John Ambulance Association. It gives plain and simple directions for home nurses, together with the elements of hygiene and various surgical information for which Dr. Edington is responsible. The book should be found of great use to those for whom it is intended and we are glad to see a note describing how to make coffee by simple infusion in the same manner as tea is made. There is one slip which should be corrected in a future edition, and that is on p. 85 where atmospheric air is spoken of as "not one of the elements ..... but a compound body." The word "compound" placed in antithesis to the word "element" gives the uninstructed person the idea that air is a chemical compound. The substitution of the term "mixture" would be advantageous.

The Public Schools Year-book, 1905. London: Swan Sonnenschein and Co. Pp. 622. Price 2*s.* 6*d.*—This book of reference gives particulars of all public schools—i.e., it is limited, "with a few carefully weighed exceptions, to such public schools as were connected with the headmasters' conference." A "Girl's School Year-book" is promised to appear during the year. In the book now before us will be found particulars of the various schools, together with information concerning the services, the medical profession, and the musical profession. Appendix X. deals with agriculture, horticulture, and with colonial openings for public school boys. Lists of preparatory schools are given but these are "not official or in any way exhaustive," and besides the matters which we have mentioned there is a variety of other information which must be of great use to all parents or guardians.

The Schoolmaster's Year-book and Directory, 1905. London: Swan Sonnenschein and Co. Pp. 1058. Price 5*s.* net.—The above-mentioned work covers wider ground than the preceding book, for its sub-title is "A Reference Book of Secondary Education in England and Wales." It contains a vast amount of information upon the subjects which are included under the comprehensive term "education" and its editor deserves every credit for the pains which he has evidently taken to compile a full, careful, and up-to-date account of educational matters and establishments and of subjects connected therewith.

Diaries.—Messrs. W. H. and L. Collingridge of the *City Press* have sent to us "The City Diary" (price 1*s.*). It is a useful desk companion, is of a handy size, gives three days to a page, is interleaved with blotting-paper of good quality, and lastly, contains a miniature City encyclopædia. The information afforded in the prefatory section appeals to, and will be found of practical utility by, every citizen who takes any interest at all in the affairs of the one square mile. The "Diary" gives, for instance, a complete list of members of the corporation, ranged alphabetically, and also according to their wards; of the City churches, with the names of the rectors, curates, organists, and other officials; of the City companies, with the names of the clerks and the situation of the halls; and of the various municipal, social, and parochial institutions that have their headquarters in, or are in any way associated with, the City. In a word, therefore, the annual is a work of reference as well as a diary pure and simple.—Messrs. Rudall, Carte, and Co. have sent us their useful Professional Pocket Book or Daily and Hourly Engagement Diary for 1905. The diary, which is contained in a neat leather case, is divided into three sections of four months each. Although primarily intended for the use of musicians any professional man or woman will find it very handy. Besides the diary there are a calendar containing the usual information and a set of blank pages for memoranda.

JOURNALS AND MAGAZINES.

The Field Naturalists' Quarterly. London: Simpkin, Marshall, and Co. Edinburgh: G. A. Morton.—The December number of this quarterly, which is only just to hand, completes the third volume of a magazine which, though it appeals specially to field naturalists, contains articles of much interest to the general reader. The editor, Dr. Gerald R. Leighton, commences a series of articles entitled, Modern Studies in Heredity, and Mr. F. G. Aflalo writes in his well-known pleasant style on the Psychology of the Angler's Fish. This last article deals for the most part with artificial baits and the author suggests that, just as a kitten will dash at any moving object at the end of a string, so a fish will seize any small object moving rapidly before its eyes. Support is lent to this view by reason of the fact that artificial bait, except when in motion, is practically useless as an attraction for fish. Other articles are the Protective Colouration of Plumage and Eggs, by Mr. Thomas Hepburn; British Bats: How to Tell Them, by Mr. H. E. Forrest; and the Feeding of Snakes in Captivity, by Mr. B. Ingram, L.R.C.P.&S. Edin. The articles on British Field Geology and Zoology are continued. It is much to be regretted that this excellent magazine does not appear more often than once a quarter.

NEWTON ABBOT HOSPITAL.—The annual meeting of the subscribers to the Newton Abbot (Devon) Hospital was held on Jan. 19th. The medical report stated that during the past year the in-patients numbered 270, the out-patients being 774, both figures being in excess of those for 1903. The financial statement showed that the income amounted to £1210, while the expenditure was £1088. Dr. E. Haydon, Dr. J. Culross, Dr. W. G. Scott, Dr. A. T. Nisbet, Mr. R. H. Grimbly, Mr. E. Hunt, and Mr. J. J. S. Sorase were re-elected members of the honorary medical staff.

THE LANCET.

LONDON: SATURDAY, JANUARY 28, 1905.

Apparent Death and Death Certification.

A REMARKABLE account of a case of apparent death was reported last week. From the facts stated in the daily papers it appears that a married woman named HOLDEN, aged 28 years, and living at Hapton, near Accrington, was believed to be dead. Her body, clad only in a nightdress and covered by a sheet, was laid out in an icy-cold room in the usual manner. Some six hours subsequently the undertaker whilst measuring the supposed corpse for a coffin observed a twitching movement of the eyelids. He had the presence of mind to resort to artificial respiration, with the result that "slowly and with trembling uncertainty an arm was raised, glassy eyes quivered in ghostly fashion, and a hand still deathly cold clutched at his own." The further history of the case is that vitality became more and more established until the woman could converse in feeble accents. There seems to be no shadow of doubt that Mrs. HOLDEN was believed to be dead, for funeral coaches were ordered, an insurance company was informed of the death, and the doctor's certificate was obtained. The medical man who had seen his patient on the previous day was not surprised to hear of her death. There are certain facts in the history of Mrs. HOLDEN's life which tend strongly to explain her state of suspended animation. In the first place, she had been ill for a long time with general weakness and for several weeks she had been confined to bed. She had obviously assimilated but little food and had been subjected to the depressing influence of cold—conditions such as are found in hibernating animals during their winter sleep. There appears also to have been a predisposition to the cataleptic state, for twice previously, once as an infant and again as a girl of 15 years, she is said to have lain as if dead. Moreover, it was disclosed that she had been subject to "fits," a definite cause of exhaustion.

BROUARDEL in his work "Death and Sudden Death" gives many illustrations of simulated death, such as the trance-like condition of the Indian fakirs, the state of children apparently stillborn and that of people the subjects of hysteria with long-continued fasting, syncope or inhibition, hæmorrhage *ad deliquium*, submersion, exposure to extreme cold, drunkenness to the extent of being *dead drunk*, cerebral concussion, anæsthesial collapse, and acute diseases such as cholera. It is obvious that to the ordinary observer this condition of apparent death may on rare occasions be mistaken for the reality. It is even possible that the skilled practitioner may have difficulty in establishing the moment at which life has departed in cases where the transition has been extremely gradual. It is beyond the bounds of reasonable probability, however, that a medical man would fail to determine by careful, complete, and repeated observation whether a body were alive or dead. It has been said that the only infallible sign of death is decomposition and taken singly this is true. If all the collective indications of death prior to disintegration of the tissues are obtained we do not hesitate to affirm that the fear of a person being buried alive is practically groundless. We know of no thoroughly authenticated case in which a body after it has been pronounced dead by competent and honest examiners has "returned to life." Thus there is ample consolation for those who fear being buried alive and for those who possess the same feeling as regards friends and relatives. BROUARDEL remarks: "If a mistake has been made it is a popular blunder, not a medical one"; and, again, "one fact is found to be almost constantly present—viz., in the immense majority of cases the persons died without having been seen during their illness by a physician, and were buried without a physician having had the opportunity of verifying their death." The real danger, then, lies not in the difficulty of establishing the fact of death but in the state of the law in this country and many parts of France which allows death certification, registration, and burial without demanding the verification of death by a qualified medical man. So long as the certifier is allowed to use the equivocal phrase "as I am informed" embodied in the official death certificates, so long will there remain the possibility of the simulacrum being mistaken for the reality. In the interests of science, humanity, and common honesty it is high time that the legislature should exact indisputable direct medical testimony that the person certified as dead no longer lives.

The Guildhall Conference on Feeding School Children.

SOME 250 delegates representing labour and other organisations, with a total membership of about 2,000,000, have met at the Guildhall and adopted a proposition in favour of the free maintenance of school children by the State. Only 13 delegates ventured to vote against the proclamation of the priniciple that this is a State and not a parochial question. It would seem that the full description given in these columns of the feeding of all the children attending the primary schools of Paris influenced many of the speakers.[1] Constant reference was made to the *cantines scolaires* and to the Paris schools. In such great questions every advantage should be taken of any practical experience that has been acquired abroad but it is not safe to venture upon too close an analogy between foreign and home institutions. Dr. MACNAMARA, M.P., made a good point when he said that as a municipal annual subvention of £45,000 sufficed to secure the feeding of all the children who attended school in Paris he thought that the same could be done in London, even if three times that amount were required, by adding only a halfpenny to the rates. But it does not follow, therefore, that the cost in England, and still less in London, should be thrown on the rates. Dr. MACNAMARA appears to forget that there are no rates in France and that

[1] THE LANCET, Sept. 17th, 1904, p. 860.

in Paris there is no district or parochial taxation. Not only in regard to this new proposal for the feeding of school children but in most other efforts at sanitary improvement and poor relief the fear of increasing local rates is one of the main obstacles which arises in this country. It was at once pointed out that while the cost to the poverty-stricken ratepayers of West Ham or of Whitechapel would be enormous the "undesirable aliens" inhabiting Park Lane would have little or nothing to pay. This is not the case in Paris, for though, like London, the French capital is subdivided into boroughs—namely, the 20 arrondissements—taxation is, for the most part, uniform throughout, being in the main derived from the octroi or town dues. Such local taxes as are levied on the individual are devised especially to relieve the poor. Thus no tax is levied on any house or tenement if the rent does not exceed £20 per annum. Then the tax is progressive according to the value of the dwelling. Moreover, the revenue for the relief of the poor is to a considerable extent derived from a tax imposed on every occupied seat of the theatres and on every bet made at a racecourse. In such circumstances the throwing of the cost of a sanitary improvement or of some measure of poor relief on the municipal revenues in France has a very different practical bearing to that of charging the same upon the rates in England. It is an old-standing grievance that in London the poor rate is lowest in the wealthiest quarters and the meeting at the Guildhall strongly resented any proposal to accentuate the inequalities which were so obviously to the advantage of the wealthy.

On the fundamental point at issue the entire conference was unanimous: Sir JOHN GORST, M.P., who presided; Dr. MACNAMARA, who headed the minority of 13; Mr. JONATHAN HUTCHINSON, F.R.C.S.; and all the trade unionists, the Socialists, the Fabians, the philanthropists, and the educationists, one and all, were absolutely and most emphatically of opinion that somehow or other every child must be fed and no child allowed to study without first having sufficient food. It was pointed out that, on an average, the school rate amounted to 1*s.* 2*d.* in the £ and that a great deal of this money was wasted because the children were not physically fit to profit by the education offered to them. Mr. HUTCHINSON said that he did not believe that there was any general physical degeneration. The essentials of life were cheaper now than they have ever been and the wages were higher. The consumption per head of beef, rice, beer, and other such articles was much greater than formerly. This optimistic view, in our opinion, however, only applies to the epoch of modern industrialism and would not hold if compared with the condition of the workers in the Middle Ages. But Mr. HUTCHINSON might have added that the death-rate was lower than it had ever been before, including even the Middle Ages. These are all very strong arguments against the supposed general degeneration of the population. Nevertheless, such degeneration is only too obvious among certain classes of the community and in certain localities. Mr. HUTCHINSON urged that if there have been improvements there is still crying need for further progress. Therefore, and as a medical man, he pressed upon the conference that meals should be provided at schools for all children and this without any sort of distinction or inquiry so far as the children themselves were concerned. Perhaps there had been some exaggeration as to the number of children said to be starving but there could be no doubt that an enormous proportion of them were inappropriately fed. For instance, milk is obviously very essential for young children, yet a large section of the community cannot afford to buy milk. He thought that every child should be offered a bowl of hot milk and bread on arriving at school. Then he urged that the boys should be taught how to wait at table, the girls how to cook, and playmasters should be appointed to organise suitable games during the hours of recreation. All this could be managed better and cheaper on wholesale lines at school than at home. The entire community would profit when this was done for the children. The State had a duty to perform in this respect. Finally, Mr. HUTCHINSON said that parents bore an unequal share of public burdens and when the State helped it would be a means of enabling those who had no children to contribute to the raising of future citizens. This, by the way, is the principle on which workmen's benefit clubs are organised in South Wales.[2] As a practical means of bearing each other's burdens bachelors are made to subscribe as much for themselves alone as married men for their whole families.

Thus the delegates at the conference all agreed that the children must be fed and, so that the burden might be more evenly divided throughout the whole community, most of them were in favour of State instead of local maintenance. But this word maintenance means a good deal more than mere feeding. In Paris it means boots and pinafores and other articles of clothing for the very needy. It also means, and this is more important from the medical point of view, that at least the sickly children shall spend their holidays at the seaside or in the country. From the Montmartre district four batches of 186 children are sent annually for a few weeks to the magnificent historical mansion and park of Luzancy. From the neighbouring seventeenth arrondissement 137 children were, according to the last figures given, sent to the seaside at Fécamp and 361 to the country at Montlhéry, and altogether they spent 8500 days in the pure air. To facilitate such outings the municipality gives £8080 to the twenty Paris districts. So also at the Guildhall meeting it was felt that feeding did not cover all the requirements of the case, hence the word maintenance. But while everyone agreed that it would be indeed most admirable to supply these and many other things to the children of the nation opinions very promptly began to divide when the question of payment was raised. Nevertheless, even on this point everyone seemed to think that the cost, however large, would prove an economy in the long run. Not only would a more healthy and intelligent race produce more wealth but there would be fewer people to keep at the public expense in prisons, workhouses, and hospitals. Then also the question of thriftless drunken parents was raised. This was met by the argument that the only way to rid the community of its most worthless members was to remove their children and so to educate them that they should not grow up like their

[2] Organisation of the Profession, THE LANCET, Feb. 14th, 1903, p. 479.

parents. This, again, would be an economy in the long run. It is scarcely within our province to discuss in detail what are the best methods of taxation for such a purpose or to consider the proportion of the cost that should, or could, be recovered from the parents. In Paris, in the poorer quarters, 70 per cent. of the children are fed gratuitously and the remainder pay only 1½*d.* for a meal of three courses. But we can at least insist on the obvious fact that the children are not responsible for the shortcomings of their parents; that if they are to grow into healthy and useful citizens they must be well fed, well clothed, and well housed. How these necessities are to be rendered available for all is a problem which will need more than one Guildhall conference to solve. But it is something to find that there is an awakening of the public conscience on the matter and that a strong desire is manifested on all sides that every child should have wholesome and sufficient food.

The Influence of Climate on the Incidence of Disease.

WE have recently published an interesting communication by Dr. WILLIAM GORDON on the influence which rainy winds exert on the prevalence of pulmonary tuberculosis.[1] With the discovery of the tubercle bacillus there was a natural tendency to ascribe to that organism a paramount rôle in the causation of the disease and to consider heredity and other supposed causal factors as of but secondary consequence. Subsequent research has demonstrated that this conclusion is a mistaken one, not only from the point of view of etiology but also of therapeutics. It is now generally recognised that although tuberculosis cannot arise without the presence of the pathogenic bacillus other agents must be present which are of equal importance. The exact nature of these agents is still in dispute. They are generally included under the convenient though rather vague term of "deficient resistance." Any cause which lowers the natural physiological perfection of an organ renders that organ more prone to the attacks of micro-organisms—and of such causes there are many. Dr. GORDON refers to some of the conditions which tend to influence the prevalence of pulmonary tuberculosis and he sets himself the task of proving three propositions: (1) that in many countries exposure to prevalent strong rainy winds is accompanied by increased mortality from pulmonary tuberculosis; (2) that in those health resorts which have been shown to be most favourable for the treatment of the disease prevalent strong rainy winds do not exist; and (3) that with the exception of the predisposition of certain races to pulmonary tuberculosis and of the effect of certain injurious occupations the influence of these winds on the prevalence of the malady is more powerful than that of any other factor.

Dr. GORDON has taken great pains to collect reports as to the prevailing winds in different parts of the world. He further states whether they are rainy or dry and then compares the distribution of pulmonary tuberculosis (as shown by the death-rate from the disease) with the occurrence of these winds. For the details of this investigation we must refer our readers to the original article. The information thus derived will be found interesting from many points of view. He certainly shows that the prevalence of strong rainy winds is remarkably associated with increased prevalence of pulmonary tuberculosis. For instance, in England the prevailing rainy winds are south-westerly, westerly, and north-westerly, whilst the region of maximum occurrence of the disease in the years 1871–80 stretched along the western side of the country from Cumberland to Cornwall. The western counties are thus the most exposed and have the highest death-rate from tuberculosis. On the other hand, Rutland, Worcester, Hereford, Stafford, and Shropshire, which are all sheltered, have the lowest death-rates. To take another instance, in Spain the heaviest rainfall is on the northern and north-western coasts, where the Atlantic gales are fully felt. The least rainfall and least wind are on its south-eastern coast at Malaga and Valentia. The death-rates from pulmonary tuberculosis in these two regions are as strikingly different as their wind and rain are. Dr. GORDON'S contention is in some measure supported by the experience gained at the sanatoriums where the "open-air" treatment is carried out. The patients seem to suffer but little from rain alone but when wind is added the greatest inconvenience is experienced and the customary exercise can only be undertaken behind "wind screens" or in walks naturally sheltered from the wind, for as SHAKESPEARE long ago pointed out, "Many there be can brook the weather that love not the wind." Dr. GORDON'S remarks in reference to the occurrence of wind and rain in the "most successful phthisis health resorts" are not so convincing. He admits that at present it would be scarcely justifiable to impugn the resorts which are subject to rainy winds but he proceeds to inquire as to whether "any admittedly very successful health resorts" are exposed to them. This phraseology is not altogether fortunate, for expert opinion is by no means uniform as to what may be considered the essential qualifications of a spot suitable for the treatment of tuberculous disease. Experience shows that many regions in this country are well adapted for the erection of sanatoriums, whilst some authorities maintain that a perfectly dry atmosphere is necessary. It is generally recognised, however, that shelter from strong and wet winds is necessary and Dr. GORDON maintains that freedom from such winds characterises the resorts to which he refers as being "very successful."

In the third part of his paper Dr. GORDON proceeds to consider the relative strength of other influences known, or supposed, to affect the occurrence of pulmonary tuberculosis. Amongst these he enumerates soil, altitude, temperature, rainfall, density of population, insanitation, occupation, race, and several others. The question of "heredity" is entirely omitted. This is certainly a large subject in itself but the observations would have been more complete had some allusion been made to it. The conclusions at which Dr. GORDON arrives are interesting. He considers that soil has a definite influence but not a marked one; that altitude has little effect, as has the rainfall. He sums up his opinion in the following words: "The influence of exposure to rainy wind therefore appears to have a greater effect in increasing the phthisis death-rate than any other

[1] THE LANCET, Jan. 7th (p. 10) and 14th (p. 77), 1905.

influences except those of differences of race and of occupation—and difference of race must be extreme—and injurious occupation must be almost universal in a community to produce as great an effect as exposure to rainy wind." The result of Dr. GORDON'S inquiry is certainly interesting. The evidence which he has accumulated lends force to his contentions and he has marshalled his facts in a manner which goes far to establish conviction. If it cannot be said that he has entirely elucidated that mysterious factor "deficient resistance" he has certainly brought into strong relief climatic conditions which have great influence on the occurrence of pulmonary tuberculosis.

Our readers' attention may also be directed to an article by Dr. JAMES W. RUSSELL which appears in our present issue "On the Relation between Various Atmospheric Conditions and the Occurrence of Cerebral Hæmorrhage." He brings forward statistics to show that a high barometric pressure is a factor in deciding the onset of an attack of cerebral hæmorrhage. He maintains that there seems to be a slight tendency towards the occurrence of such attacks on days of high atmospheric pressure and also on days of rising pressure, the former probably exerting the greater influence. There seems also to be a marked tendency to the occurrence of hæmorrhage on days of low wind pressure and the combination of a low wind pressure with high barometric pressure is the condition under which the number of cases is highest. The question is an interesting one and merits further investigation.

The influence of climate on the incidence of disease is a complicated one and has received close attention from many observers, more particularly in relation to tropical disease. The two papers to which we have referred open up the subject in fresh directions and are of particular interest in dealing with diseases which are unfortunately of frequent occurrence in this country.

Major Seaman's Address before the International Congress of Military and Naval Surgeons at St. Louis.

THE address of Major LOUIS L. SEAMAN, M.D., of the United States army, delivered before the International Congress of Military and Naval Surgeons at St. Louis in October last—a report of which is now before us—deals more especially with a subject—namely, the Japanese Military Medical Service—which possesses an unusual degree of interest at the present time. In order rightly to understand the address it is necessary to advert very briefly to the circumstances which gave rise to it.

Major SEAMAN, accompanied by his assistant Dr. TRAUTMAN of New York, arrived at Tokio in June, 1904, armed with all the necessary official credentials for acting as a medical attaché in the Russo-Japanese war. After some inevitable delay the much-coveted pass that was to take them to the front was obtained from the Japanese authorities. Just before leaving Manchuria Major SEAMAN was asked to contribute a paper at the meeting of the International Congress on the medical features of the war. The address in question is the result of that request. In complying with it MAJOR SEAMAN warns his audience that his paper is not to be regarded as a scientific digest of what had occurred but merely as a narrative of some of his personal experiences, together with a few conclusions drawn largely from observation in this and in other wars. Quite apart, however, from some points of scientific and surgical interest, to which we need not now more particularly allude, the chief value of the address consists in the fact that its author deals with his subject in such a graphic, bold, and vigorous way as to leave no room for doubt about the impressions which he derived from all that he saw and heard at the seat of war. The effect produced by his personal experience and observations in Japan and Manchuria led Major SEAMAN to form the very definite and optimistic views in regard to the excellence and efficiency of the Japanese medical and sanitary systems which find forcible expression in the published report of his address. And it is mainly to this aspect of the subject that we now briefly refer. As regards the organisation and practical working of the Russian hospital system in this war the information at our command is relatively scanty and as regards the number of Russian sick and wounded with the results attained under it our information is not only incomplete but conflicting and untrustworthy. In the case of Japan, although it is too early to obtain statistical proof of the assumption that a relatively large reduction in the percentage of mortality from wounds and disease has taken place, nevertheless careful observation and the records of Japanese hospitals seem to point strongly in this direction. Major SEAMAN in any case confidently predicts that this will prove to be the case and gives several incidents as grounds for his faith in this respect. We may quote, for example, the following: "Up to August 1st 9862 cases had been received at the reserve hospital at Hiroshima, of whom 6636 were wounded. Of the entire number up to that time only 34 had died." Again, "To July 20th the hospital ship *Hakuai Maru* alone brought 2406 casualties from the front without losing a single case in transit. Up to July 1st 1105 wounded—a large proportion of whom were stretcher cases—were received at the hospitals at Tokio; none died and all but one presented favourable prognosis." Contributing factors to this happy result have been the application of the principle of non-interference with wounds and thorough antiseptic methods of treatment. But it is in the case of the sacrifice of lives to preventable disease that the Japanese success has been most marked. The loss from this class of disease in the first six months of the campaign will, Major SEAMAN confidently believes, prove to be but a fraction of 1 per cent. "History," he remarks, "will never again furnish a more convincing demonstration of the benefit of a medical, sanitary, and commissary department, thoroughly organised, equipped, and *empowered* to overcome the silent foe." A large portion of the address is taken up with a comparison between these remarkable results and those of other wars; our own campaign in South Africa, the Spanish-American war, and the French losses in Madagascar may be given as examples. It has nevertheless to be borne in mind that as regards some of their sanitary methods and procedures the Japanese have still something to learn, if we may judge from what a special correspondent has to say on the subject in his "Medical Notes from

the Far East," published in another column of our present number.

We have only touched the fringe of Major SEAMAN'S address but we have said enough, we think, to show that the Japanese have exhibited a preparedness, a capacity for organisation, and a mastery and adjustment of details to the practical purposes of war in their sanitary and hospital arrangements which account for the results which Major SEAMAN records with so much appreciation. Like all stories worth the telling the moral lies on the surface and the war in the Far East should be regarded as an object lesson for all those who have to deal with the sanitary and medical aspects and requirements of modern warfare.

Annotations.

"Ne quid nimis."

THE LATE SIR JOHN SIMON'S SURGICAL WRITINGS.

AMONG the MSS. of the late Sir John Simon recently purchased for the library of the Royal College of Surgeons of England are some notes dictated by, or in the handwriting of, the great sanitary reformer which deserve attention as showing the attitude of Simon towards his own publications. Taken together they form a kind of medical and surgical last will and testament, having been written, to judge by internal evidence, in the middle "nineties" of the last century at a time when Sir John Simon was already a very old man. Inserted in the MS. of a proposed reprint of his well-known paper on the Comparative Anatomy of the Thyroid Gland, published in the "Philosophical Transactions" so long ago as 1844, is a note in which Sir John Simon confesses that at the time of publication he was unacquainted with Johannes Müller's work on the myxinoids (1834-39). "The writer [Simon], though now at a distance of 50 years from the times referred to, still regrets that in respect of part of his inquiry he was unacquainted with Professor Müller's classical work, but on consideration he has not deemed this a reason for suppressing the present paper. He, of course, assumes that it will not now be read without the check (where applicable) of Professor Müller's treatise; but he further believes that his own essential point, which is to suggest the connexion of the thyroid gland with the brain, had not before this publication been argued and is still deserving of skilled attention." In a note prefixed to a projected reprint of his paper on Sub-acute Inflammation of the Kidney, originally printed in the Transactions of the Royal Medical and Chirurgical Society in 1847, Simon, *circa* 1895, candidly admits "his present belief that the opinions he expressed in it [the paper] with regard to cyst-formation in the kidney were probably erroneous; that probably the early forms which he believed he saw of cyst-formation were in truth but the washed-out remnants of tubules..... In other respects he believes the paper to be sound and that some of the doctrines expressed in it may perhaps even still be serviceable." Referring to his now classical article on Inflammation in Holmes's "System of Surgery" Simon pens the following semi-biographical note which is interesting as being the composition of a great thinker at a time of life when most old authors have long ceased to write anything. "At the time when the writer began his official engagement under the Privy Council he had a fair margin of leisure for collateral work in his profession and during the nine months from October, 1859, he used this opportunity to contribute the opening article *Inflammation* to Mr. Timothy Holmes's 'System of Surgery,' then in first edition; but some nine years later when a second edition of the work was to be issued, and this at a moment when Professor Cohnheim's recent contribution to the subject demanded careful consideration, he did not feel himself able to undertake more than a portion of the duty; and in such editions as have been issued since that time he has reluctantly been quite unable to participate. Whether his original article may perhaps still deserve to be read as a whole by the advanced student who can put aside its superseded portions is a matter on which the writer will not pretend to judge; merely observing that the article in its main argument seems to him to be still valid." As further appears from the same note Simon proposed to reprint those parts of the article in Holmes's "System" which refer to "the production of heat in inflamed parts" and "contagia in the inflammatory process." The articles on the thyroid and the kidney he proposed to reprint *in extenso*. These short notes by Simon afford a curious commentary on the current opinion that works on medicine and surgery become superannuated and valueless in a decade at the most.

THE OBSTETRIC DUTIES OF THE ARMY SURGEON IN AMERICA.

THE soft answer that turneth away wrath is, as a rule, by no means characteristic of controversy, especially in the scientific branches thereof. The fields of theological and of biological argument are especially prone to bring forth a crop of personal recriminations which is unworthy both of the dignity of the subjects discussed and of the intellects of the protagonists. A specimen of courteous argument now lies before us which comes from that great country of our kinsmen, the United States of America. Dr. Joseph Jeffrey wrote a letter to the editor of *American Medicine* which appeared in the issue of Feb. 8th, 1902, containing the innuendo that the opinions of Major Charles E. Woodruff, "an army surgeon of several campaigns," on obstetrics and such allied topics as maternal impressions were about as valuable as his (Dr. Jeffrey's) opinions on camp sanitation. To this Major Woodruff, who has answered in no undignified haste, replies in a long letter appearing on Dec. 24th, 1904, and written in a vein of Gilbertian pleasantry. Army surgeons are really obstetricians, he says; "they are supposed to be official experts in the specialty of military medicine, including all the branches of camp and barrack sanitation, relations to health of clothing, climate and food, modifications of civil surgery found necessary in the same classes of cases far from modern operating rooms, whether found on the battlefield, lines of communication, or in temporary sheds in dirty surroundings, where a modern surgeon would not dream of operating, diseases peculiar to troops, anthropology as related to the selection of recruits, and a host of other sub-branches about which a civil physician never bothers. But legally army surgeons are specialists in only one thing—obstetrics." By a Bill passed in Congress it is the duty of officers of the medical department to give gratuitous professional services to the families of officers and soldiers where practicable and it is the "right and duty" of the post commander to inquire "why it was the surgeon spent so much time with Lieutenant and Mrs. X instead of being at the hospital; and the surgeon will have to explain the details of the obstetric case if required." Formerly the relations between practitioner and patient were privileged as in civil life. Now it seems "army ladies are the only ones entitled to have the details of their obstetric trials recorded in the national archives." Again, the Secretary of War can place medical officers on any duty as he thinks best but no duty is explicitly stated by law except obstetrics. Whatever duty the officer may be doing he can be

wired for by Mrs. X for obstetrics, if he wants vacation leave he must put it off for obstetrics, his first duty in all cases is obstetrics. "Is it any wonder, then," Major Woodruff asks, "that after watching for 15 years the official *début* of military babies our minds, in accordance with the law, should run to maternal impressions?" (The subject of the controversy.) Unless he learns all about this matter the writer points out that he is not competent to fulfil the law, however well he may be able to perform the duties connected with his chosen calling. The letter, which would occupy about three columns of THE LANCET, effectively answers the purpose for which it was written in a spirit of perfect good humour. If all unkind innuendoes made in the heat of controversy were replied to in a similar manner we should hope for the dawn of the millennium in the very near future. But we fear that the time is not yet—at any rate not in this country, however it may be across the Atlantic.

THE DEFINITION OF WHISKY IN OLDEN TIMES.

WITH reference to the recent discussions on the purity of malt whisky and of the adulteration of whisky with patent-still spirit it is of interest to learn the precautions which were taken by the Scottish Parliaments centuries ago to protect the purity of Scotch whisky. A correspondent who has been investigating the subject in the British Museum sends us the following excerpts taken from old documents on the subject. In seeking for a definition of whisky or brandy due regard, it seems to us, is bound to be paid to the original meaning of these words.

"Accounts of the Lord High Treasurer of Scotland," edited by Thomas Dickson, 1877.—Vol. I., p. c. c. XIII.

Whisky or Aqua Vitæ, date 1494–5.

The Exchequer Rolls show a delivery to Friar John Cor of eight bolls of malt to make aqua vitæ. That it was not largely manufactured nor in general use at the time is shown from the comparative rareness of its occurrence, as well as from the manner in which, on the occasion referred to, it was furnished to the King. It was probably reckoned rather among drugs, than among articles of ordinary consumption.

There is a footnote to the above as follows:—

Fratri Johanni Cor, per preceptum compotorum Rotularis, ut asserit de mandato Domini regis ad faciendum aquæ (*sic*) vite VIII. boll brassij.

The next notice of the use of aqua vitæ is to be found in the index to the Acts of Parliament of Scotland in the British Museum, where we note that in 1579 the following law was passed:—

No one to make or sell aqua vitæ from 1st Dec. to 1st Oct. next except earls, lords, barons, and gentlemen for their own use.—C. 56, III. 174.

Later the value of the trade seems to have been realised, for in 1655 we see that:—

The importation of aqua vitæ or strong waters was prohibited.—VI. II. 828a.

In 1655 the town council of Glasgow issued regulations for persons who should "brew, sell and tap aqua vitæ," and further in the same year:—

An excise of 2d. per gallon English, or quart Scots, imposed on aqua vitæ or strong waters distilled in Scotland; of 4d. per gallon English or quart Scots on spirits made of wine imported; of 1s. per gallon English or quart Scots on spirits sold instead of aqua vitæ or strong waters.—VI. II. 828a, 828b.

Already the Scotch had seen the danger of whisky being adulterated and at once took steps in the shape of a heavy duty to guard against such adulteration. In 1663 they went further still, for they then passed a law to the effect:—

Importation of foreign aqua vitæ prohibited.—C. 13, VII. 458.

In 1672 we find:—

Ratification to Edinburgh of an import on foreign aqua vitæ, strong waters and other foreign spirits distilled.

These laws show that the Scotch, more than 200 years ago, were alive to the danger of the adulteration of whisky with foreign spirit and took care by their laws to protect their pure malt product. And that whisky was a pure malt product is shown by the next two enactments, as well as by the first paragraph of this article, in which it is stated that eight bolls of malt were supplied to Friar John Cor. We find then in 1695:—

An excise imposed of 3*s.* per pint on aqua vitæ and strong waters, not made of *malt* brewed and sold within the kingdom: of 6*s.* per pint on aqua vitæ, brandy, and strong waters (probably foreign); and 12*s.* per barrel on foreign beer.—IX. 451a.

Again in 1705:—

A tack of the excise on aqua vitæ made of *malt*, set in 1698 for five years to Sir William Menzies for £40,000 per annum to be paid quarterly.—C. 2. X. 31.

A "tack" in Scotland is a lease. So it seems clear from these old laws that whisky was originally a pure all malt spirit and that adulteration by means of foreign spirits was either entirely prohibited or had to be paid for at a prohibitive rate. It is a pity that the Government of the present day cannot do for us what an enlightened Scotch Government did for its people more than 200 years ago.

MEDICAL ARTICLES IN LAY JOURNALS: THE PREVALENCE OF HOOKWORM DISEASE IN PORTO RICO.

A CORRESPONDENT writes:—

Several of the principal lay papers of the United States have recently come to an appreciation of the fact that their readers take great interest in medical affairs and particularly in matters concerning public health. In order to supply news of this character in an accurate manner some of the journals have initiated the system of procuring as members of their staff competent medical men whose duty it is to supply authentic and reliable medical literature and to supervise papers which come within their especial sphere. With this object in view the *New York Herald* has recently sent to Cuba and Porto Rico the following three well-known physicians: Dr. Wolfred Nelson, F.R.G.S., a graduate of McGill University; Dr. P. Jenkins, formerly health officer and health commissioner of New York City; and Major Louis L. Seaman, U.S.A. Drs. Nelson and Jenkins were despatched to Cuba in order to investigate the reported outbreak of yellow fever there, while Major Seaman went to Porto Rico. Letters have been received and published in the *Herald* from all three of these doctors, that from Major Seaman being especially interesting. Dr. Seaman has found that the hookworm disease prevails to a remarkable extent among the inhabitants of Porto Rico, rendering the majority of them unfit for active work. The investigator states that the unsanitary conditions of the island, contributing largely to the production of the disease, are the result not of intentional neglect, but of environment and of inherited habit, for which the living generation cannot be held altogether responsible. The writer gives it as his opinion that the uncinariæ gain entrance into the system through the naked feet of the farm labourers whence they work their way into the intestines, become encysted, and develop into full-fledged blood-suckers and gradually undermine the vitality of their unconscious host. Remedies recommended are means to rid the soil of the nematodes, and the application generally of effective sanitary arrangements, and the education of the people as to the need of thorough personal hygiene. Major Seaman, moreover, makes the suggestion that free clogs should be provided for the labourers in agricultural districts of Porto Rico in order to protect their feet. The example set by the *Herald* in sending out a commission to Cuba and Porto Rico in the interests of public health is one wholly in keeping with the progressive character of that journal, and the trend of many of the principal newspapers here of supplying their readers with authentic medical news and with articles bearing on medical subjects properly written is a distinct advance in modern journalism.

The *New York Herald* has evidently gone to work in the right way to obtain accurate information on certain medical questions of national (or rather international) importance and by publishing in its columns suitable articles on such topics it can, and no doubt will, render the community a great service. It will be observed that the subjects dealt with are essentially matters of public hygiene, the remedial treatment of which can hardly be effective except under two conditions—namely, when constituted authorities take the initiative and when the general public loyally support the efforts of the administration. Public opinion, however, requires to be formed and guided—an educational process which in America naturally comes within the province of the journalist. So long as the medical articles in the ordinary newspapers are confined to general questions of sanitation and the prevention of disease much good may be done, but in the absence of proper editorial supervision the practice is not unlikely to lead to a variety of abuses. Newspapers of the standing of the *New York Herald* are under no temptation to increase their circulation by meretricious aids but there are countless journals of a lower rank which would find discussions on

the prevention of disease insufficiently attractive and would seek to draw attention to themselves by dissertations on any medical topic which might be exciting the public imagination at the time, whether the pathology of cancer, or the surgery of the brain, or "bloodless surgery," or hypnotism, or hydrophobia, or the treatment of special diseased conditions, and so on, *ad infinitum*.

COLLAPSE DURING EXAMINATION OF A POST-PHARYNGEAL ABSCESS: RE-ESTABLISHMENT AND MAINTENANCE OF THE CIRCULATION FOR FOUR HOURS BY MEANS OF MASSAGE OF THE HEART.

IN the *Boston Medical and Surgical Journal* of Jan. 5th Dr. David Cheever has recorded the following remarkable case in which the circulation was re-established and maintained for four hours by means of massage of the heart. A girl, aged three years, was taken to hospital complaining of sore throat and dysphagia. There was a history of a fortnight's illness, with feverishness and anorexia. The child became progressively worse and unable to eat or to talk. During the last few days respiration became laboured. On examination she was pale and ill-nourished, with a pulse of 140, respirations 46, and slight cyanosis of the finger tips and the lips. The respiration was shallow and a few moist râles were heard at the bases of the lungs. There was a diffuse fulness on the right side of the neck which was not tender. A swelling obstructed the oro-pharynx but the struggles of the child made complete examination impossible. An operation was undertaken. As it was impossible to reason with, or to gain the confidence of, the child the necessary manipulations were carried out by force but as gently as possible. The arms were confined by a blanket and she was held in the nurse's lap. No anæsthetic was given and she struggled ceaselessly. The introduction of the gag caused such choking and cyanosis that it had to be withdrawn—with immediate relief. At a favourable moment it was again placed in position and the finger and knife were introduced but a point of fluctuation could not be felt. Breathing suddenly ceased and the child was laid on the table and artificial respiration was begun. The pulse could not be felt nor could the heart sounds be heard with the stethoscope. The face and the mucous membranes were moderately cyanotic, the pupils were dilated and immobile, and the cornea was insensitive. The time was 6.20 P.M. With the child in the Rose-Trendelenburg position the abscess was opened and evacuated. As auscultation showed that a satisfactory amount of air was not entering the lungs a rubber catheter was introduced through the mouth into the trachea and the expansion of the chest by manipulation was supplemented by insufflation. No improvement ensued and the cyanosis was followed by extreme pallor and there were no signs of action of the heart. Cardiac massage was begun by rhythmical pressure at the rate of 60 to the minute over the third, fourth, and fifth left costal cartilages. This process with the artificial respiration was continued for four and a half hours until further efforts were evidently useless. As rapidly as possible brandy and strychnine were injected directly into the heart, the legs were bandaged firmly from the toes to the groins, the abdomen was manually compressed, and heat and blankets were applied. Directly following the pressure over the heart the colour returned to the lips and the face and the capillary circulation could be demonstrated by the blanching and the return of colour after pressure on the cheeks, the tongue, the lips, and the nails. No heart sounds were heard with the stethoscope at any time but feeble pulsations were detected in the radial and the femoral arteries, always immediately after the pressure on the heart; they were never felt when the pressure was interrupted for a moment. The pupils remained dilated and immobile. Oxygen under considerable pressure was forced into the lungs through the catheter but the colour of the mucous membranes at once became worse, therefore insufflation was again begun. At 8.30 a pint of saline solution was infused into the median cephalic vein with transitory improvement of the colour and the pulse. There were sluggish oozing from the subcutaneous tissue and marked hæmorrhage from the vein. The blood was slightly darker than normal. Ten minims of solution of adrenalin were injected into the pectoral muscle and repeated without noticeable effect. At nine o'clock the tube was accidentally withdrawn from the trachea. Its reinsertion was difficult in consequence of beginning rigidity of the jaw. Tracheotomy was therefore performed and insufflation was continued. The wound bled less than the previous one. The colour failed steadily and the skin became mottled, although the capillary circulation could still be demonstrated in the lips. Finally it was determined to inject stimulants into the spinal canal but in turning the body over it was found that rigor mortis was well established in the legs. Further attempts at resuscitation were therefore abandoned four and a half hours after they were begun. Death evidently was due to cardiac collapse from the shock of the manipulations performed in attempting to operate on an extremely exhausted patient. In endeavouring to maintain the circulation artificially Crile and others have shown that not only must the heart be kept beating but the blood pressure must be insured by increasing the peripheral resistance. Crile does this by injecting adrenalin which causes the vessels to contract and by the use of his inflated rubber suit which offers a resistance that can be regulated. In the above case resistance was produced by bandaging the limbs firmly and compressing the abdomen. Keen has recently collected 27 cases in which massage of the heart was used for resuscitation, of which three were successful, and Cohen has reported a successful case. In some cases the pericardium has been opened and the heart rhythmically compressed but the circulation has never been more than temporarily restored. In a case described at the Society of Anæsthetists by Dr. E. A. Starling[1] the pulse and the respiration stopped together during the operation for removal of the vermiform appendix. The surgeon, Mr. W. Arbuthnot Lane, introduced his hand through the abdominal incision, felt the motionless heart through the diaphragm, gave it a squeeze or two, and felt it commence to beat. After artificial respiration the patient recovered and the operation was completed without more anæsthetic. Good convalescence followed. In an annotation published soon afterwards[2] we discussed the whole subject of resuscitation by compression of the heart. Dr. Cheever calls attention to the fact that his case differs from most of the others recorded in that automatic cardiac pulsation was not re-established. He thinks that the blood was pumped through the vascular system by the mechanical pressure on the heart, which seems to us very doubtful.

THE SALE OF PATENT MEDICINES IN NEW ZEALAND.

A RECENT issue of the *New Zealand Gazette* contained regulations issued under section 101 of the Public Health Act, 1900, with effect from June 30th, 1905, notifying that: "All patent medicines imported or sold or offered for sale in the colony shall be required to have the contents with their exact proportions legibly set out in English upon a label affixed on the bottle, box, or container. In addition to such information, where such medicines contain one or more of the poisons scheduled under 'the Sale of Poisons Act, 1871,' and its amendments, the words 'This contains poison' must

[1] THE LANCET, Nov. 22nd, 1902, p. 1397.
[2] THE LANCET, Nov. 29th, 1902, p. 1476.

be marked in a clear medium-sized block type upon the label." The regulations provide that any person who commits a breach of, or fails to comply with, any of the foregoing regulations shall be liable, on conviction, to a penalty not exceeding £50. For the purposes of the regulations the term "patent medicines" is declared to include, *inter alia*, certain articles which are specified by their usual titles. Among them we observe a certain number of food preparations sold under distinctive names by well-known firms of high reputation, together with the "special extra strong female pills," "diabetes cures," "witches' oils," and other nostrums of the quack. From this it is clear that the administrators of the Public Health Act of New Zealand use the term "patent medicine" in a general and popular sense and not in its strict meaning of a medicinal compound protected by letters patent. They will, if they vigorously carry out their regulations, protect the public in an efficient manner without causing inconvenience or injury to honest traders who are perfectly satisfied that the nature of what they sell should be known and who have no misgivings lest their goods should fail to contain the constituents of which they should be compounded. The vendors of much advertised "remedies," on the other hand, will have to make public the fact that their bottles and pill-boxes have nothing in them that can possibly account for the "cures" which they profess to have effected, and to these the legal provisions quoted should prove a serious stumbling-block. We note a good many familiar quack names among the titles scheduled as well as some which are new to us. If a similar measure were to be put into force in England the list would be a longer one and a large proportion of the advertisers in our newspapers and popular magazines would find themselves compelled to make statements which, if true, would condemn them as impostors and if untrue would render them liable to be fined.

THE ADULTERATION OF BRANDY.

IN two cases heard at Portsmouth police court on Jan. 17th, in which the defendants were alleged to have sold adulterated brandy, the bench failed to convict because in his evidence the public analyst admitted very properly that it was not possible to detect the difference between highly rectified grain spirit and highly rectified grape spirit by analysis. The words of the analyst's certificate were that the brandy contained 37 per cent. of spirit not derived from the grape. The fact is that "a spirit distilled or derived from the grape," though a principal definition and description, is not complete and this was well brought out in the judgment given by Mr. Fordham in the Islington case, the certificate of analysis in which contained precisely the same words as those used by the public analyst of Portsmouth. "I do not think," said this magistrate, "that after a spirit obtained by the distillation of wine has been so highly rectified as to have lost the properties peculiar to spirit so obtained, it is still spirit obtained by the distillation of wine so as to fulfil the definition of brandy." That is the crux of the whole matter. Silent or neutral spirit having its origin in the grape has no more of the qualities of brandy than has a spirit distilled from any other material. Otherwise the significance of the terms whisky, brandy, and rum is lost and they may as well be given up as meaningless. It would be well if public analysts could adopt the phraseology of the Government analysts when dealing with the results of the analysis of spirits which, at least in one instance, we know to be as follows: "From a consideration of the results of our analysis we are of opinion that it [brandy] consists of a mixture of pot-still grape spirit and neutral or patent still spirit. We estimate the proportion of the neutral spirit present as not less than 75 per cent." As we hold that brandy is only correctly defined as a pot-still grape spirit there would then be no escape on such a technical point as was raised in the case alluded to. We commend these facts to the Portsmouth bench.

THE DIRECTOR-GENERAL OF THE INDIAN MEDICAL SERVICE.

THE appointment of Lieutenant-Colonel G. Bomford, I.M.S., C.I.E., to the post of Director-General of the Indian Medical Service has been announced. He is M.D. Lond., was educated at King's College Hospital, London, and in addition to being a man of high professional attainments has shown considerable administrative capacity in the various important posts which he has filled; consequently he should prove a very fitting and acceptable head of the distinguished medical service to which he belongs. He is principal of the Medical College, Calcutta, and *ex-officio* first physician to the Medical College Hospital. For his services with the Perak Expedition in 1875-76 he was awarded the medal for that expedition with clasp.

THE MANAGEMENT OF THE DELIRIOUS PATIENT.

THE correct management of a patient whose illness culminates in acute mental delirium occasionally causes great anxiety to the medical adviser, more especially when the necessity arises in a public institution. Ten years ago Dr. Danford Thomas held an inquest upon a man who, having developed delirium (during septicæmia) in the London Temperance Hospital, had been summarily removed therefrom to the insane ward of the local parochial infirmary. The hospital authorities considered it inexpedient that he should remain in a general hospital to the annoyance of the other patients. The justice who visited him was unable to certify that his delirium was lunacy; he died ten days later. Last week the same coroner held an inquest at the Paddington Green court upon a case which illustrated a converse difficulty. A man suffering from acute bronchitis was admitted to St. Mary's Hospital; after four days' treatment he discharged himself while still very ill, obstinately refusing to give any reason for his conduct. Three hours later he entered a police-station and made ridiculous charges and complaints as to his alleged maltreatment in the hospital. The police, perceiving his delusions, conducted him to the Paddington Infirmary as an indigent person of unsound mind and there he remained without protest until his death from pneumonia and exhaustion. A magistrate who visited him the day after his reception not only was unable to certify insanity but forcibly commented on the action of the hospital authorities in allowing him to leave in the way and the manner described. These cases may be taken as types: in the former instance the resident medical officers considered their patient too delirious to be retained; in the latter they did not consider their patient sufficiently *non compos mentis* to be restrained, in fact, they feared that any duress on their part, medically justifiable perhaps, might result in actions at law for assault and for false imprisonment against themselves. The law does not recognise delirium as coming within the provisions of the Lunacy Acts, it matters not whether the mental derangement is part of an attack of acute alcoholism, acute apical pneumonia, enteric fever, or septicæmia, indeed it would be impolitic in medical practice to stigmatise as insane those who exhibit what is euphemistically called "brain fever" as a concomitant incident of their physical disease. The certification of these patients as having been even temporarily insane would lead to lasting resentment against the medical man who rashly advised it—a piece of worldly wisdom which it is

well to remember in cases of puerperal delirium. Dr. Danford Thomas pointed out that if such cases were regarded as insane they might be treated legally as pauper lunatics and this would allow their speedy removal to the parochial infirmary. In private practice the difficulty of management is not so great, for the near relatives of the patient will at once agree to any precautionary measures which can be confidently recommended. In a public hospital, however, considerable circumspection may be needed when patients become obstreperous. Thus if a patient suffering from pneumonia attempts in his delirium to discharge himself through the window he would, of course, be restrained, but what if at an incipient stage of his madness he insists on discharging himself through the door? In both cases the consequences may be equally, if not as quickly, fatal. When a man suffering from an acute disease submits to skilled professional treatment, is he not presumed to recognise the appointed medical authorities as placed over him *in loco parentis* and does he not tacitly submit to any reasonable line of treatment that they may adopt for his benefit? If this is the true relation it would justify the coercive duress necessary to prevent a patient from running headlong to wilful death, that is, unless and until a responsible person arrives who is able to appreciate the critical situation. No general hospital should be without an isolation room ready for the reception of noisy patients, and further, where a patient threatens to work harm upon himself the responsibility for his safety should be at once shared by demanding the presence of the police who will then be officially associated in the solution of a practical medico-legal problem.

THE WORKMEN'S COMPENSATION ACT AND SURGICAL OPERATIONS.

AT the Southwark county court an application made under the Workmen's Compensation Act to discontinue weekly payments made to an injured workman led recently to the discussion of a point which arises from time to time in these cases and will continue justly to form a subject for comment, although the law on the subject appears to be settled. The employers contended that the man had recovered from his injury and in the presence of conflicting medical testimony a medical referee appointed under the Act was called upon to report. This he did to the effect that the man was unable to perform his accustomed work owing to the presence of conditions which had been caused by the injury but which might be removed by surgical operation. The judge pointed out that he was unable to order a surgical operation, although the employers might persuade the workman to submit to one, and in the circumstances the application to discontinue the award was dismissed with costs. This decision although in accordance with previous ones does not prevent such occurrences from inflicting in some instances a considerable amount of injustice upon the employer or upon the company in which he insures his risks. Surgical science is capable of determining beforehand the varying probability of success of a large number of the operations called for when workmen are hurt in the course of their employment. No one would wish the injured person to be compelled to submit to surgical interference the result of which was clearly doubtful and the failure of which would, or might, leave him in a worse plight than before. At the same time no one can consider it just that a man should receive a pension and live in idleness when a reasonable man, independent of any pecuniary reward for his incapacity would certainly submit himself to a surgeon and by his aid regain the capacity for earning a living. In cases where jurors have to award damages according to their opinion of the extent of the injuries sustained the difficulty does not arise to the same extent, for the case can be presented to the jury so that they can estimate the degree in which the defendants should be held responsible. The damages under the Workmen's Compensation Act are simply measured by the duration and the degree of the incapacity to do work and other cases besides that alluded to have proved that the workman is fully aware of the advantages which the law has afforded him.

MULTIPLE GESTATION.

Dr. A. Pinard has contributed an article on gestation to the first part of the seventh volume of Charles Richet's fine "Dictionnaire de Physiologie," published in January this year. The last section of this article is devoted to multiple gestation and contains some interesting facts collected from a vast number of observations. In the first place, in regard to the circumstances that favour multiple pregnancies they include race, heredity, multiparity, age, and development of the ovaries. The influence of race is undoubted. It was demonstrated by Bertillon in an article which appeared in the "Dictionnaire Encyclopédique," and Tchouriloff in supporting the researches of Bertillon has pointed out that amongst racial characters height is of great importance and has expressed this in the aphorism, "height and gemellity decrease together." Heredity has a powerful influence on multiple gestation and there is strong evidence derived from careful observations that paternal influence is exerted, though no explanation of the fact has been advanced. In regard to age, the statistics of Lebel show that the largest number of multiple gestations occurs between the ages of 21 and 28 years; those of Dr. Pinard are in accordance with this but those of Puech give the ages between 25 and 35 years as most favourable for twin pregnancies. The observations of the last-named writer seem to show that one circumstance is not to be overlooked, the superior development of the ovaries which manifests itself in the production of two or more perfect ova capable of being simultaneously impregnated. Dr. Pinard has collected a considerable number of cases of superfecundation or, as he properly terms it, successive fecundation, such, for example, as the following recorded by Caillier, a veterinary surgeon at Mouhon. A mare was covered by a stallion and an ass in the space of half an hour. This mare gave birth in due time to a foal and within an hour afterwards to a mule. Cases of multiple gestation have been recorded in the human female. Thus Dr. Brittain communicated to the Edinburgh Obstetrical Society the case of a woman who at the age of 47 years had given birth to 25 infants in 14 accouchements. William Wood attended a woman in October, 1857, who gave birth to one boy and two girls and in the following October, 11 months and 22 days later, had twins. The wife of a Parisian shopkeeper named Brunet had, according to Sue, 21 infants in seven consecutive years. This man seduced a young servant who at the end of nine months presented him with triplets. These numbers are, however, far exceeded by the historical case of a peasant named Kinlow who in 1753 was presented to the Empress Catherine. He had been twice married. He had 57 children by his first wife—four times four infants, seven times three, and ten times two at a birth. By his second wife he had triplets once and twins six times. The French authorities have drawn their conclusions in regard to the frequency of multiple births in women from large numbers of recorded cases. Thus Dubois in 484,350 accouchements in Germany, England, and France found 6248 cases of twins, 78 of triplets, and four of four at a birth, or putting it in another form there was one case of twins in 78 deliveries, one case of triplets in every 6209 deliveries, and one case of four at a birth in 121,082 deliveries. Veit, basing his statement on the immense number of 3,360,557 deliveries, found that twins occurred in 149,904

cases, triplets in 1689 cases, and quadruplets in 36 cases, giving the proportion of one twin delivery to 89 single births, one triplet in 7910 births, and one quadruplet in 371,126 births. Dr. Pinard observes that the frequency of multiple pregnancies varies greatly in different countries. In France twins are delivered in the proportion of 1 to 92 single births, in Germany 1 to 84 cases, and in Great Britain 1 to 63 cases of single births. Bertillon expresses the proportion in which twin births occur in a different way. He finds that in 1000 confinements twins occurred 9·9 times in France, in Belgium 9·7, in Italy 11·4, in Austria 11·9, in Norway 12·5, in Prussia 12·5, in Holland 13·1, in Denmark 14·20, and in Sweden 14·50. Dr. Pinard observes that Bertillon's statistics in regard to Belgium are not in accord with Constant Leroy's experience who found 650 cases of twins in 39,506 single births. Finally, Dr. Pinard adduces the observations of Bertillon showing that in certain departments of France women bring forth twins more frequently than in others. Thus in Gironde, Haute-Garonne, Corrèze, Charente, Ain, Ardèche, Lozère, Gers, Cantal, Puy-de-Dôme, and Dordogne the proportion of twins in 1000 cases of pregnancy varied from 6·77 to 7·95, whilst in Finistère, Jura, Morbihan, Nord, Mayenne, Cher, Vaucluse, Vosges, Vendée, Moselle, Savoie, and Haute Savoie it varied from 11·36 to 12·90.

TYPES OF ALCOHOLIC INSANITY.

AN important discussion on the above subject was held at the Boston Society of Psychiatry and Neurology, an account of which is published in the *Journal of Nervous and Mental Disease* for December, 1904. Dr. H. W. Mitchell of Boston introduced the discussion in a paper based on the study of 148 patients (excluding cases of true dipsomania which exhibited no insane symptoms) at the Danvers Hospital for the Insane, or 13 per cent. of the male patients admitted. The cases were grouped as follows: delirium tremens, acute and subacute alcoholic hallucination, delusional alcoholic insanity, and alcoholic dementia. Two were cases of Korsakoff's psychosis polyneuritica of alcoholic origin. He found that among cases of delirium tremens "nearly all recovered without development of the graver forms of alcoholic insanity." The prognosis in cases of acute alcoholic hallucination was good for the attack but relapses due to renewal of drinking habits were common. These cases were characterised by vivid auditory and visual hallucinations, the former predominating, with little disturbance of consciousness and with transitory delusions probably based upon the hallucinations. In the case of subacute alcoholism there were auditory, visual, olfactory, and tactile hallucinations, with more prolonged persistence of delusions. Periodic relapses were seen in these cases during their stay in hospital, the intervals between the attacks being periods of practically normal mental condition. Permanent mental deterioration and dementia were the ultimate goal of this class of cases. Alcoholic delusional insanity was the term used for cases showing a development of delusions somewhat resembling paranoia. In many cases the delusions are elaborated from hallucinations. "Ideas of marital infidelity, poisoning, and persecution were most common in this class of cases." A tendency to incurable chronicity was observed in many and only a small proportion of cases recovered. Alcoholic dementia comprised cases in which marked mental deterioration and decay of intelligence and morality were the predominant symptoms and this occurred as the result of many years of more or less continuous use of strong spirits. Permanent mental deterioration was observed in all the cases studied. Among the various alcoholic psychoses were seen many cases resembling general paralysis, the exact diagnosis being possible only after prolonged observation—weeks or months. 10 per cent. of the total cases suffered occasionally from epileptiform convulsions, while suicidal attempts and acts of violence were common in all classes of cases—points of medico-legal interest. An alcoholic or an insane parentage was common and made the prognosis bad. Somatic and grandiose delusions with alteration of the sense of personal identity were unfavourable symptoms in delusional cases. In continuing the discussion Dr. Woodbury said that 90 per cent. of cases recovered from first attacks of delirium tremens. Dr. Philip C. Knapp said that in the wards and clinics of the Boston City Hospital cases of delirium tremens, hallucination, and alcoholic dementia were fairly common, while paranoid forms were quite rare. Dr. Mitchell, in reply, said that alcoholic pseudo-paresis resembling general paralysis was fairly common. Such patients had sluggish pupils which, however, reacted to light. Inequality of the pupils and failure of the reflex to light were found practically only in cases which had had syphilis. The delusional or paranoid cases in his series amounted to nearly one-fifth of the total. Parental intemperance was a common etiological factor. The milder forms of alcoholic psychosis occurred in early life frequently in association with habits of drinking. Alcoholic dementia showed itself in middle age or later and was the result of heavy and continuous drinking for many years.

SEÑOR MANUEL GARCIA'S CENTENARY.

IT has now been definitely arranged that on the date of the centenary, Friday, March 17th, a celebration will take place at noon in the rooms of the Royal Medical and Chirurgical Society, 20, Hanover-square, London, W., in the course of which His Excellency the Spanish Ambassador will convey to Señor Manuel Garcia the congratulations of the Spanish Government. This will be followed by the presentation of an address on the part of the Royal Society, before which Señor Garcia almost exactly 50 years ago read his paper entitled "Physiological Observations on the Human Voice," in which the invention and the method of application of the laryngoscope were described. Other addresses on the part of musical bodies, old pupils of Señor Garcia, and various laryngological societies will follow. So far as is known at present, the Berlin, South German, French, Dutch, and Belgian laryngological societies will be represented by special deputies. In conclusion of this part of the celebration Señor Garcia's portrait, painted by Mr. John Sargent, R.A., and presented by admirers from all parts of the world, will be handed to him, together with an album containing the names of the subscribers. In the afternoon the London Laryngological Society will hold a special meeting at which the foreign delegates will be present and in the evening a banquet will take place, probably at the Hotel Cecil, in which all those who wish to do honour to the distinguished guest on the occasion of the hundredth anniversary of his birth will join. The banquet will be attended by ladies. Further particulars will be given when the time approaches.

THE ETIOLOGY OF CARCINOMA.

WE publish in another column an article by Dr. W. Ford Robertson and Mr. Henry Wade on the protozoon plasmodiophora as a cause of cancer in man, in which a further account is given of investigations already reported on at the meeting of the British Medical Association at Oxford on July 28th, 1904.[1] The writers claim for their work that it has yielded confirmatory results along three parellel lines: (1) in a series of figures presented by stages in the life-cycle of the plasmodiophora brassicæ in turnips; (2) in a series of figures of intracellular and intranuclear inclusions found in carcinomata in man; and (3) in the

[1] THE LANCET, August 13th, 1904, p. 469.

stages in the life-cycle of an organism which they claim to have cultivated from such tumours. The account of the investigations themselves leaves nothing to be desired in the pains which have been taken to conduct them in accordance with the demands of scientific accuracy. Hence it is all the more regrettable that the writers have omitted to establish the justice of their *a priori* position that cancer is a parasitic disease and the tenability of their working hypothesis that carcinoma is dependent upon the growth of a parasite of the same class as that which causes "finger-and-toe" disease in turnips. If the analogy between the processes of cancer and of "finger-and-toe" disease in plants be admitted, their observations on the similarity in the intracellular inclusions in the two diseases are entitled to rank as an important contribution to human knowledge. No attempt is, however, made to draw any parallel between the two diseases. In "finger-and-toe" disease an intracellular parasite lives in the turnip cell till it has no longer need for its host and finally devours it. The efforts of the turnip to make good the ravages are not demonstrated to be analogous to the ceaseless proliferation of carcinoma cells which are not produced to replace any known defect. In the absence of any proof of the correctness of the primary conjectures, the very careful observations to which they have led lose much of their significance. Previously to the writers' first contribution the claims of protozoon parasites of this class had already been subjected to searching examination. As a botanist who can speak with authority, von Tubeuf had protested against any analogy being drawn between diseases of plants of this nature and the carcinomata of man. As a pathologist Lubarsch, after experimental inquiry, had likewise declared no analogy to exist. Dr. Robertson and Mr. Wade have not attempted to meet the objections which have already been raised to the etiological significance which they attribute to the plasmodiophora, nor have they attempted to show that the processes of growth in "finger-and-toe" disease in turnips present a parallel to those of carcinoma. Until these deficiencies are removed and the results are amplified by experiments, a discussion of the similar appearances described in three parallel series of observations is out of place and the general importance of these careful investigations cannot be properly estimated.

PUBLIC HEALTH OF THE ROYAL BOROUGH OF KENSINGTON.

IN his recently published summary of vital and mortal statistics for Kensington during the year 1904 Dr. T. Orme Dudfield, the medical officer of health, supplies a variety of interesting information relative to the public health of the borough. The estimated population of the borough at the middle of the year was 178,500. The births registered were 3448, being 117 fewer than in the year 1903. The birth-rate, which of late years has always been considerably below that of London as a whole (27·8 per 1000 in 1904) has been declining since 1868, in which year it was 33·1 per 1000. In 1904 it was 19·3 per 1000, which was 1·5 below the decennial average and was the lowest recorded. In North Kensington—i.e., the part of the borough north of Holland Park-avenue and High-street, Notting Hill—the birth-rate was 27·1 per 1000; while in South Kensington—i.e., the part of the borough south of the streets named—it was 11·0 per 1000. The "crude" death-rate was 14·2 per 1000, which was 2·4 below the rate in the metropolis as a whole. The death-rates in North Kensington and South Kensington were 17·7 and 10·5 per 1000 respectively. In some other features, such as the infantile mortality and the mortality from zymotic diseases, the relative unhealthiness of North Kensington also appears. Inquests were held in 203 cases. There were no uncertified deaths. It is satisfactory to find that there is an increasing use of the public mortuary: 332 bodies were deposited in it as compared with 295, 279, and 304 in the three preceding years. The chapel of rest for the dead, situated at Avondale Park, was informally opened on June 23rd when the first body was admitted to the mortuary chamber. The number of bodies received to the end of the year was 26. It is to be expected that as the people become better acquainted with the accommodation provided for the reverent care of their dead the building will be used more extensively.

THE INFLUENCE OF HÆMORRHAGE ON THE COMPOSITION OF THE BLOOD PLASMA.

IN a paper read before the Philadelphia County Medica Society on Nov. 9th, 1904, and published in the proceedings, Dr. Thomas Stothesbury Githens records the results of experiments the object of which was to determine which of the proteids of the blood plasma is nearest to the form in which proteid is absorbed and how the proteids are influenced by varying conditions. The method adopted was to draw blood from the femoral artery of dogs directly into a solution of sodium oxalate in salt solution, centrifugalising, and then separating the proteids by the method of "salting out." A quantity of blood was withdrawn on four or five occasions at intervals of several days and was examined as described above. The results obtained were that the fibrinogen steadily decreased in the successive samples, the serum albumin increasing proportionately. From his experiments Dr. Githens concludes that of the proteids of blood plasma albumin stands nearest to the form in which proteid is absorbed and that it is therefore quickly replaced from the food proteids, while fibrinogen, being a more complex and specialised form of proteid, is more difficult to replace. Similar results have been obtained by other observers in dogs and snakes. An observation of some interest in this connexion has been made by Moll who found that blood plasma, after being made slightly more alkaline and kept at a temperature of 56° C. for half an hour, exhibited an increase in the percentage of globulin, from which it might be inferred that the change from the simpler to the more complex proteid can occur in the blood itself. The results are of interest in that they are what might have been expected from the composition and chemical properties of the blood proteids, and they constitute a noteworthy addition to our knowledge of the chemistry of the blood under varying conditions.

ON Dec. 19th, 1904, that day being the eightieth anniversary of the birth of Sir Peter Eade, M.D. Lond., his colleagues on the staff of the Norfolk and Norwich Hospital presented him with an address, accompanied by a birthday gift, in recognition of the high esteem in which he is held by them and of his valuable services to the institution during 47 years as one of its physicians.

THE Russian Institute of Experimental Medicine, says the *Sviet*, has announced a prize in the name of K. Th. Kasimir of the value of £100 to be awarded to the best treatise on the application of radium in the treatment of skin diseases and particularly external cancer. The prize will be awarded on Jan. 1st, 1908—i.e., Jan. 14th New Style.

THE distinction of Chevalier de la Légion d'Honneur has been conferred upon Dr. George Ogilvie, senior physician to the French Hospital.

AT the recent annual meeting of the Manchester Edinburgh University Club Professor A. H. Young, Victoria University, was elected President for the ensuing year. It

is anticipated that at the next annual dinner Sir William Turner, K.C.B., F.R.S., Principal of the University of Edinburgh, will be the guest of the club.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 27, 1827.

Now every person knows that the stomach does secrete mucus and a peculiar liquor, but I do not see the sources of this; we see distinct sources in the intestines, but we do not in the stomach; at least I can't.

With respect to the *physiology* of the stomach, to the best of my knowledge and belief, Mr. Hunter was the first man who broached those opinions which are generally accredited, or have not till of very late been disputed, which is, that digestion depends upon the sufficient quantity of the liquid which the stomach secretes—of the gastric fluid, and that this liquor has the properties of rendering any nutritive matter solid, so that it should not pass through the *pylorus*, until it had undergone this peculiar solution by the gastric fluid. Well, if the white of an egg is given to a hungry dog, in a few minutes it will be as *hard* as if it had been boiled for hours. The juice of the stomach instantly curdles milk. Take the gastric fluid out of the stomach of a calf just born, and it has most curious properties; the little of that fluid that is in the stomach they dry in it, then dissolve it, and then curdle gallons of milk with it, as you all know. Then, as the fluid of the stomach has the power of dissolving that which is nutritive, the question is, why don't it dissolve itself, it is flesh? John Hunter would never boggle at an answer for that, and he says, that the life of the stomach preserves it. There is no chemical agent will act on it. Worms live in the stomach, and yet there is no doubt but that a meal of dead worms would form a very nutritive repast to a dog. But does the fluid ever dissolve the stomach? Yes, it does. The proof of this is, that if a man eats a large meal, and is suddenly afterwards killed by a blow on the head, as has often occurred, you will see that the gastric fluid is acting, not on the food, but on the stomach, that it makes a hole in the stomach, and that the food gets through that hole into the belly. Various stomachs have been examined having these appearances. But Sir Astley Cooper told me of a case where a person was met with after death under these circumstances: the body was laid in what they would call *a very ungain attitude;* it laid with the thorax lower than the abdomen, and upon opening the body, the stomach was found to be dissolved at its *lesser* arch; it is usually at the *larger* arch where it is dissolved; in that case the diaphragm was dissolved, and the stomach was in the lower part of the thorax.

Some people say there is no gastric juice; why? Because we cannot get it. And why can't we get it? Because it is not secreted but at certain times; it is only secreted when it's wanted. There are many who think even now, that it's the *vital powers* of the stomach, and *not* the *liquid* that causes the digestion. Well, they may entertain that notion if they please, but all I am bound to do is, to tell you what appears to me to be the most reasonable physiology.[1]

[1] Excerpt from Mr. Abernethy's Physiological, Pathological, and Surgical Observations, delivered in the Anatomical Course of Lectures at St. Bartholomew's Hospital.

WEST CORNWALL INFIRMARY, PENZANCE.—The thirty-second annual meeting of the subscribers to this institution was held on Jan. 18th, under the presidency of the Mayor. The medical report stated that during 1904 the out-patients numbered 1698, and the in-patients were 111, both figures being slightly less than those for 1903. 60 patients were sent to the Bolitho Convalescent Home. The financial statement showed that the total expenditure was £912, while the total income amounted to £869. The committee in its report states that good progress is being made with the erection of the new infirmary. The committee, at the suggestion of Mr. F. Bolitho, decided that on the completion of the new building the members of the medical profession practising in Penzance should take their respective share of hospital work.

ARMY MEDICAL ORGANISATION IN BAVARIA.

BY F. HOWARD, M.D. ST. AND.,
COLONEL, ARMY MEDICAL STAFF (RETIRED).

THERE are 30 military hospitals in Bavaria for the treatment of those patients who cannot be attended to in barracks. These hospitals serve to complete the education of the sanitary staff and are also used for the administration of stores and sanitary appliances. They are usually under the direction of the most senior military medical officer of the garrison, who has the chief command of the establishment; the patients are treated by the medical officers under him and by their assistants. These medical officers are all taken from the garrison. A medical officer does duty at a hospital for one year. Half of the orderlies belonging to the garrison troops and the orderlies belonging to the hospital are on the medical (sanitary) staff. The number of medical officers at a military hospital depends on its size, as does the staff of orderlies on the number of patients. One non-commissioned officer and one orderly are usually allowed for 20 patients.

The field hospitals are, as in other armies, set apart for the reception of wounded from the battle-field or from first-aid stations. The staff and *matériel* of these hospitals can be used for direct service on the field of action. If circumstances demand it the field hospitals can be utilised for other patients than wounded men. Each field hospital can treat 200 men without extra aid and can be divided into two sections each capable of acting independently. The chief surgeon commands the field hospital. There are 12 field hospitals for each army corps, distributed to divisions according to needs. Every reserve division has four field hospitals.

The ambulance service is undertaken by the sanitary companies, called sanitary detachments, which establish places for first aid, search for the wounded on the field of action, and carry them to the field hospitals. To a division of infantry there may be one or two sanitary companies, while a reserve division has one. There are no special detachments of bearers.

To each battalion of infantry, chasseurs, pioneers, and artillery on foot, for every cavalry regiment, and for every detachment of field artillery there are two medical officers. One sanitary non-commissioned officer and four bearers attend every company, battery, or squadron. On the lines of communication there are field hospitals within the sphere of the "Etape" inspection, "Etape" field hospitals and war hospitals, the staffs being regulated by their size and the special work to be done, the staff being furnished by the staff of the field hospitals, and the *matériel* by the reserve depôts of the field hospitals. Reserve hospitals are established within the sphere of the occupying army in addition to already existing garrison hospitals.

The following table gives the numbers, ranks, pay, and allowances of officers[1]:—

Staff.	Number.	Pay (marks).	House allowance (marks).	Lodging allowance (marks).	Horse allowance and forage for horses.
Surgeon-General of the Army (Generalstabsarzt)	1	9000 to 1900 charge allowance	1500	1620	Horse allowance and forage for 3 horses.
Surgeon-Generals (Generalaerzte)	3	1 with 7800 2 with 7200	540 to 1200	594 to 1314	Horse allowance and forage for 2 horses.
Colonels (General-oberaerzte)	6	6000	420 to 900	432 to 972	Forage for 1 horse.
Lieutenant-colonels (Oberstabsaerzte)	58	29 with 5850 29 ,, 5400	420 to 900	432 to 972	Forage for 2 horses for mounted corps.
Staff surgeons (Stabsaerzte)	66	33 ,, 3900 33 ,, 2700	420 to 900	432 to 972	Ditto.
Surgeons (Oberaerzte)	51	1500	216 to 420	288 to 540	Ditto.
Assistant surgeons (Assistenzaerzte)	74	900	216 to 420	288 to 540	Ditto.

[1] See La Medecina Militar Española, April 10th, 1904.

The numbers given are over and above the medical men who, on account of compulsory service, do duty as one year men in subordinate medical establishments.

The proposals for the Army Medical Department in Bavaria were agreed to without discussion for the financial year 1903–04. The proposed cost for the department, including cost of medicines, pay of pharmaceutical assistants, and so on, would reach the sum of 1,408,415 marks. Notwithstanding certain economies, nothing has been withdrawn which could interfere with the desire to attract the best men to the corps and to maintain a high scientific standard. For study allowances for junior medical officers fit for promotion some 25,500 marks are voted and for the military medical academies of the reserve classes some 10,250 marks. Some 12,000 marks go to allowances for professors and travelling expenses of those who study at the academies. While actually employed all officers of the medical department study for a fixed period before each grade promotion. The practical examination takes places during the manœuvres. Some 15,092 marks are allotted to anatomical museums, models of sanitary *matériel*, &c., and as in Germany no academy or institute is unprovided with a library 5600 marks are for the military medical libraries which, not like the Spanish, contain new instead of old books, very few classics, and a large number of reviews and monographs in various languages.

There is a supplementary vote of 2,271,740 marks for the construction and repair of pavilions in the military hospitals and 65,000 marks for field sanitary *matériel* which is to be of the most up-to-date type. Every year, or almost every year, supplementary votes up to 490,000 marks go to this object. The Germans always recognise that the army in time of peace is a preparation for war and that the Army Medical Department is very much more than a corps of mere hospital assistants.

TWELFTH ANNUAL REPORT (FOR 1903) OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

IN a leading article in THE LANCET of Jan. 21st on the annual report of the county medical officer of health we discussed certain administrative changes that had recently been effected in the public health department at Spring-gardens, changes which we believe to have been absolutely necessary in order that the purely sanitary work of the Council might be coördinated with the new educational functions which have devolved upon that body in consequence of the dissolution of the London School Board.

We now proceed to consider that section of the county medical officer's report which treats of the prevalence of epidemic and infectious disease in London during the period to which it relates. It will be remembered that in each of his successive annual reports since 1889, in which year powers were acquired for the compulsory notification of infectious disease, Sir Shirley F. Murphy has published uniform statistics concerning the age and sex-incidence of attack and death by the notifiable diseases, together with appropriate remarks on the measures necessary for their control. In his present report he has summarised the information collected during the last 14 years, and in a useful chart has shown the mean distribution of six of the most important of these diseases in each week and month of the year. This chart usefully supplements the diagrams prepared by Dr. W. Ogle and published in the Registrar-General's annual summary for 1890. Over these diagrams, however, the present chart presents the manifest advantage that the curves relate, not to the death-rates but to the rates of attack by the several diseases. Moreover, Sir Shirley Murphy's chart deals with a more recent period—in fact, with the entire period that has elapsed since the publication of Dr. Ogle's diagrams, and on both these accounts it will be the more interesting and valuable to the student of epidemiology.

Although it is impracticable to reproduce this chart in our present issue we insert the following table which gives the principal information graphically illustrated in the chart—namely, the mean relative incidence of attack by the several diseases in successive months of the year:—

Month.	Small-pox.	Scarlet fever.	Diph-theria.	Enteric fever.	Ery-sipelas.	Puerperal fever.
January	8·3	6·6	7·6	7·5	8·3	9·9
February ...	13·0	6·0	7·6	6·0	7·3	9·2
March	13·9	5·8	7·0	5·0	6·6	6·9
April	13·4	6·1	6·5	4·4	6·8	7·2
May	12·6	7·2	7·6	4·8	7·2	7·7
June	9·8	8·1	7·8	5·8	7·2	7·2
July	6·4	9·6	9·0	6·5	7·8	7·1
August	5·4	8·6	7·8	8·0	7·9	7·3
September ...	3·7	10·8	9·3	12·3	9·3	7·8
October	2·7	12·7	10·9	14·6	11·1	9·9
November ...	5·2	10·7	10·1	14·5	11·2	10·3
December ...	5·6	7·8	8·8	10·6	9·3	9·5
Total...	100	100	100	100	100	100

Being based on the aggregate notifications of 14 years in a population approaching five millions, the London practitioner of medicine may rely with some confidence on the figures here given as representing the probable future incidence on season of the several diseases in question.

As in former reports, we notice the familiar table showing the excess or diminution in the year 1903 of the more important diseases causing death in the administrative county as compared with the corrected annual average in the previous ten years. From this table we see that with two exceptions the mortality from every one of the 20 diseases included therein has declined, in most cases considerably. Following upon two years of epidemic prevalence the incidence of small-pox in London in 1903 was comparatively slight. The mortality due to that disease was inconsiderable, the deaths registered in the administrative county amounting to only 13 from small-pox and three from cow-pox and other effects of vaccination. In the first 14 weeks of 1903 the largest number of cases of small-pox notified in any one week did not exceed five. During this period, however, the disease was prevalent to a considerable extent in some of the large provincial towns, more than 4000 cases being notified in one or other of them during the quarter, whilst only 74 cases occurred in London. It is, therefore, not surprising that infection was repeatedly imported into London from the provinces, but in addition to this we learn that it was from time to time introduced from abroad.

Although the mortality from measles in 1903 was below the decennial average, London nevertheless suffered more severely from that disease than did the great provincial towns, with four exceptions. In the course of the year 1903 the order of the London County Council came into force, extending to measles certain legal provisions for the prevention of infectious disease, except the requirement of notification. Whether or not the new order leads to the giving of more prompt information concerning absentees from school on account of measles is a question as to which there exists much difference of opinion. To what extent it is possible under existing conditions to limit the spread of measles cannot yet be stated generally but it is as well to note that many metropolitan medical officers of health regard the new powers with satisfaction. They recognise the value of these powers as an educational influence in impressing the dangerous nature of measles upon parents and persuading them to abstain from the common practice of allowing children suffering from that disease to come into contact with their fellows. Although during the holidays the chief source of information, that of the school, is wanting, Sir Shirley Murphy provisionally approves of the Council's new order, the effects of which are being carefully watched by certain of his medical colleagues.

In proportion to population the cases of scarlet fever notified in 1903 were fewer than in any previous year since 1891; the case mortality among the reported cases was also considerably below the average. If the mortality of scarlet fever be stated, not in terms of cases notified but as a proportion of the population affected, London would appear to have suffered less heavily from this disease in 1903 than have any of the great English towns except West Ham, Hull, and Leicester. In commenting on the low fatality (2·9 per

cent. of the attacks) and on the low case-rate of scarlet fever in 1903, Sir Shirley Murphy recognises the mildness of the disease in London. With diseases of this nature the difficulty of finding explanation for the occurrence of recognised cases is very great, inasmuch as mild unrecognised cases must often give rise to cases in which the symptoms are sufficiently pronounced for recognition, the source of infection being thus obscured. In a population such as that of London the chances of exposure to infection by unidentified cases are much greater than in sparsely inhabited districts; it is therefore satisfactory to record that Dr. G. Newman was able to trace infection to an antecedent case in 90 out of 283 cases occurring in Finsbury, whilst Dr. F. G. McCleary succeeded similarly in 96 out of 448 cases reported in Battersea. As in past years school influence was again powerful during 1903 in determining the spread of infection among children of school age. The effect of school closure during the holidays in interrupting the autumnal rise of scarlet fever in London is conspicuously shown in a diagram which may well be compared with the corresponding diagram for enteric fever, also included in the report; this diagram does not show any similar interruption. The table given above, which is based on experience in London during a long series of years, indicates the seasonal prevalence of scarlet fever; the months of September, October, and November are there shown to be the period of greatest prevalence and the month of March the period of least prevalence of this disease.

Diphtheria is another disease the prevalence, if not the fatality, of which is closely connected with attendance at school. Both the attack-rate and the case-mortality of diphtheria were lower in 1903 than in any year since 1891. The table shows a striking similarity in the seasonal incidences of scarlet fever and diphtheria, for which the only discernible cause is the common one of school infection. Sir Shirley Murphy gives the now familiar table showing the percentage increase or decrease of attacks of diphtheria in the four weeks of "holiday influence" (i.e., the thirty-first to the thirty-fourth week) in contrast with that in the four weeks respectively preceding and following the period of holiday influence; and with respect thereto he remarks that "the interruption of the autumnal rise during the period of the summer holiday previously referred to in the case of scarlet fever, is equally conspicuous in the case of diphtheria." In the year 1903 London experienced a lower mortality from diphtheria than did any of the great provincial towns, Leeds, Sheffield, and Leicester alone excepted. We learn that in the course of 1903 only a few localised outbreaks of this disease were observed, all of which were traceable to school attendance. In Paddington ten cases occurred among children attending a certain school, which was closed in consequence, with the result that no further cases occurred. In Chelsea seven cases occurred in a school, and in Finsbury seven cases in one school and ten in another, a relationship between which occurrences was established by Dr. Newman. Sir Shirley Murphy goes on to suggest that the appreciation of the part played in the dissemination of diphtheria by "carrier cases" must inevitably lead to a fuller examination of "contacts." Fortunately, as regards diphtheria, bacteriological methods are available for this purpose, and it is clear that the more completely the examination of "contacts" is carried out the more thorough will be the control over the extension of diphtheria. In a community like that of London the difficulties in the way of complete success are doubtless great. They need not, however, prevent steps being taken for the prevention of school attendance by children who although highly infective nevertheless present no clinical symptoms of the disease.

In proportion to population the reported cases of enteric fever in London were fewer in 1903 than in any previous year since the establishment of compulsory notification and the deaths were fewer than in any year since 1869, in which year deaths from enteric fever were first separately classified. The seasonal distribution of attacks was strikingly similar to the average, as shown in the table before referred to.

Among the articles of food mentioned as possible causes of infection by enteric fever are shell-fish, watercress, ice-creams, water, and milk. The extent to which contaminated shell-fish is productive of this disease in London cannot be determined. In some cases there is evidence of the ingestion of shell-fish being followed by enteric fever at an interval which corresponds with the incubation period of that disease; in other cases there is the additional evidence that the shell-fish had been obtained from polluted sources; whilst in others, again, the evidence does not amount to more than this, that a particular person suffered from an attack of enteric fever after eating shell-fish at some time within the limits of the incubation period.

In several instances it appears that persons who were notified as suffering from this disease had, within the incubation period, eaten either ice-creams or watercress. In Hackney two localised outbreaks were attributed by Dr. J. K. Warry to the eating of watercress. In one of these outbreaks 48 cases of enteric fever were reported and in the other 62. Inquiry as to the food-supply of the people in these affected areas led to the exclusion of all articles of food except watercress, and an inquiry as to the source from which several samples of the watercress were derived led to the discovery of serious contamination of the water in which it had been grown. The only instances in which attacks of enteric fever were attributed to milk occurred at Eltham; these, however, were few in number and were probably due to the admixture of polluted water with the milk.

(To be continued.)

THE CENTRAL MIDWIVES BOARD.

THE members of the Central Midwives Board met on Jan. 19th, at 6, Suffolk-street, Strand, Dr. F. H. CHAMPNEYS being in the chair.

The Board proceeded to consider under the provisions of the rules of procedure the proposed removal of the name of Miss Edith Gregory, a certified midwife, from the Midwives Roll, the charges alleged against her being that of signing false certificates in connexion with the training of candidates for the examinations of the Obstetrical Society of London.

Mr. G. W. DUNCAN, the secretary of the Central Midwives Board, stated the facts of the case. He pointed out that the matter came under the notice of the Board in consequence of a communication from the Obstetrical Society of London informing the Board that after consideration of the case of a certified midwife, Miss Edith Gregory, the council of the Obstetrical Society of London had resolved that her L.O.S. certificate should be forfeited. In the opinion of Mr. Duncan the charges against Miss Gregory rested on the reply which she had sent to the Obstetrical Society of London admitting that she had signed certificates required by nurses before admission to the examinations to the Obstetrical Society of London indicating that the nurses had attended not fewer than 20 labours, whereas, in point of fact, that number of cases had not been actually attended at the time Miss Gregory signed the certificates. Miss Gregory, however, pointed out that she understood that it was quite right to sign certificates so long as the nurses would have completed the number of cases before the examination took place.

In the course of the evidence that was offered in support of the charges against Miss Gregory it appeared that several years ago the Obstetrical Society of London was aware of the practice that certificates were signed for nurses entering the examinations of the society without these nurses having attended the required number of cases of labour, it being understood that the requisite number of cases would be made up to the proper total before the day of the examination.

Mr. C. E. GODWIN of the firm of Messrs. Godwin and Co., solicitors, Winchester, addressed the Board on behalf of Miss Gregory. In the course of his remarks Mr. Godwin stated that Miss Gregory had attended and supervised some 500 confinements and that throughout the whole course of these cases not a single septic case had occurred nor had a death taken place. That record, Mr. Godwin continued, was one which few could put before the Central Midwives Board. Miss Gregory was therefore a well-qualified midwife and if as the result of that day's proceedings her name was taken off the Roll the Board would be defeating the main object of the Midwives Act which the Board was called upon to administer. In regard to the number of cases attended by the nurses whose certificate Miss Gregory had signed, he observed that these nurses had attended a sufficient number of cases to be within a measureable distance of the number required and during the month

between the signing of the certificates and the examinations the cases that were wanting would have been attended. It could not therefore be concluded that Miss Gregory had deliberately signed these certificates with any improper intention. At the most it could be said that she was lax. Mr. Godwin concluded by declaring that there was no intention on the part of Miss Gregory to do anything wrong and he asked the Board to dismiss the charges against her. Of course the Board might consider it its duty to pronounce a warning in regard to the signing of certificates but he could not imagine that it would remove the name of Miss Gregory from the Roll of Midwives.

The Board then went into *camerâ* to consider its judgment and strangers were requested to withdraw.

Strangers having been re-admitted, Dr. CHAMPNEYS, addressing Miss Gregory, said that the Board had found her guilty of misconduct and had recommended that she should be cautioned as to her future conduct in signing certificates. The Board had decided, however, not to go to the extent of striking the name of Miss Gregory off the Roll of Midwives.

THE RUSSIAN CRISIS: ACTION OF THE ST. PETERSBURG MEDICAL PRACTITIONERS.

THOUGH we have every right to express the conviction that freedom is necessary to the progress of science, still it is not within the function and scope of this journal to deal with the political aspect of the terrible struggle now taking place in Russia. On the other hand, and without discussing the political issues raised, we may record that our medical colleagues in Russia have done what they conceived to be their duty as citizens and this in spite of the great danger which such action entailed. On Dec. 31st last, this being the anniversary of the foundation of the Academy of Medicine and Surgery, a banquet was held at St. Petersburg. 300 medical men were present and many more desired to attend but there was not room enough to admit them. Dr. S. Elpatieoski was chosen as president of the banquet and made an appropriate speech. Dr. Mikhailovitch, Dr. Kokoujkine, Dr. Morgouliev, and others having also spoken, the medical men present had the courage to face the terrors of Siberia by adopting the following motions:—

We, medical practitioners of Petersburg, united together on the 18/31 December, date of the anniversary of the Academy of Medicine and Surgery, and numbering 300—we have arrived at the conviction that at the present moment and now that the conscience of the nation has awakened we are under the moral obligation of joining our voice to the universal voice of Russia.

We therefore declare that the medical corps cannot properly or regularly fulfil its duty to the community so long as the present *régime* of police bureaucracy continues. We are profoundly convinced that mere partial reforms of this *régime* would be powerless to insure that Russia shall take its place in the forward march of civilisation. The necessary conditions of such progress are the inviolability of the person and of the domicile, freedom of conscience, freedom to write, to speak, to form associations, and the firm establishment of representative institutions resting on a democratic basis. Consequently, we proclaim the immediate necessity of (1) a complete amnesty in regard to all political or religious condemnations; and (2) the convocation of a constitutional assembly consisting of representatives of the people freely elected by citizens of both sexes, without distinction of nationality or religion, and by universal suffrage, equal, direct, and secret.

Those present at the banquet then voted that the following telegram should be dispatched:—

To Professor Erisman (driven out of Russia in consequence of his liberal opinions and now professor in Switzerland).—The medical practitioners of Petersburg, to the number of 300, assembled at a banquet, after adopting a resolution demanding the overthrow of the present police and bureaucratic *régime*, desire to express the souvenir of profound esteem which they entertain for you in consequence of the services you rendered and which brought down upon you the persecutions of that *régime*. They formulate the hope that, favoured by a new *régime*, they will again have the pride of seeing you work and act with them on Russian territory.

A second telegram was sent to the Mayor of Moscow, Prince Galitsine, as follows:—

Deeming that the era of respectful silence is now and for ever passed, and that at the present moment, at this decisive and historic hour, it is the duty of every citizen to speak up and loudly express his sentiments in regard to the needs of Russia, we, medical practitioners of Petersburg, hail with profound satisfaction the first steps which have been taken by the citizens of Moscow on the road that leads to the political enfranchisement and the renaissance of Russia.

The same telegram was sent to M. Moukhanov, President of the zemstvo of the Government of Tchernigov. Finally, a telegram of protestation and sympathy was sent to Dr. Zabousov.

That the medical practitioners in associating themselves with the present upheaval, and this in so pronounced a manner, incurred serious risk has been proved by subsequent events. For instance, on the Saturday night previous to the massacre an influential deputation of literary men waited on M. Witte, Prince Mirsky, and M. Rydzeffsky for no other purpose than to implore that measures should be taken to avoid the shedding of blood. On the following Tuesday the members of this deputation were all arrested and thrown into the prison-fortress of St. Peter and St. Paul. Professor Kareyeff, who as a scholar enjoys a European reputation, is among these prisoners, and their offence, judged from the standpoint of Russian autocracy, is not in any way as serious as that committed by the 300 medical practitioners when they voted in favour of the above motions and telegrams.

THE PREVIOUS EXAMINATION AT THE UNIVERSITY OF CAMBRIDGE.

WE have received the following communication from a correspondent which we insert without necessarily endorsing *en bloc* the views therein contained.

"The changes in the Previous Examination proposed at Cambridge by the Studies and Examinations Syndicate, of which the President of the General Medical Council is a member, are exciting keen controversy within and without the University. They are intended to effect an improvement in the general scope of the examination which has to be taken by all candidates for medical and surgical degrees and also to open an alternative course for students from schools in which the ancient classics do not form the sole basis of instruction. It is known that to a large number of men who intend to follow the scientific and medical curriculum the present requirement of a modicum of 'compulsory Greek' is a serious hindrance. The 'Greek' is got up by a combination of 'crib' and 'cram' a month or two before entrance and it has no abiding educational or literary value. It is forgotten as soon as the examination is passed. The syndicate proposes: (1) that both Greek and Latin shall be no longer required, French or German being allowed as an alternative for one of them; (2) that the test in English and English composition shall be improved; (3) that Paley's 'Evidences' shall cease to be a subject of examination; and (4) that two of the four school subjects—English history, experimental physics, elementary chemistry, and Scripture knowledge—shall be taken by all candidates. The mathematical subjects are retained in their recently altered form. It is, moreover, proposed that the standard to be reached in Greek, in Latin, in French, and in German shall be raised above that which is now practicable. Set books are omitted and unseen translation with composition or translation from English are to be required. This will insure that the successful candidate has a real working knowledge of the languages of his choice, and remove the objection that an 'easy option' is offered to the non-classical. On the issue of the present controversy between reformers and anti-reformers depends the educational future, not only of the University, but of many secondary schools throughout the country. It will probably be decided by the vote of non-resident members of the Senate at a Congregation to be held next month. Medical graduates who are members and who sympathise in general with the proposed reforms are expected to visit the University in considerable numbers. A committee has been formed in support of the syndicate and is prepared to send to all inquirers detailed information bearing on the question. Applications should be addressed to Mr. A. C. Seward, F.R.S., who is tutor for natural science and medicine at Emmanuel College, and is acting as secretary to the Cambridge committee. He will be glad to receive the names of medical members of the Senate who intend to vote *placet*."

ASYLUM REPORTS.

London County Asylum, Colney Hatch (Report for the Year ending March 31st, 1904).—The average number of patients resident during the year was 2176, comprising 901 males and 1275 females. The admissions during the year amounted to 522—viz., 247 males and 275 females. Of these 418 were first admissions. Dr. W. J. Seward, the medical superintendent, states in his report that the admissions were 45

in excess of the number for the previous year. They included 41 cases of epilepsy and 33 of general paralysis, 29 of the latter being males. 57 patients were transfers received from other asylums and two were criminal lunatics brought from prison. With regard to the causes of insanity in the admissions hereditary influence was present in 27 per cent., 24 per cent. had suffered from previous attacks, 18 per cent. were due to alcoholic intemperance, and syphilis was ascertained to exist in a considerable number of cases. There were 29 patients whose age on admission was over 70 years. "Among the admissions there were 113 Jewish patients ....., and the present number of Jewish patients in the asylum is 304, being an increase of 35 since last year." The number of patients discharged as recovered during the year amounted to 197, comprising 76 males and 121 females, or 9·1 per cent. of the average number resident. The deaths during the year amounted to 258, or 12 per cent. as calculated on the same basis. Of the deaths nine each were due to cancer and epilepsy, 10 to organic disease of the brain, 13 to colitis, 14 to pneumonia, 19 to senile decay, 20 to cardiac disease, 32 to general paralysis of the insane, 41 to pulmonary and other forms of tuberculosis, and the rest to other causes. "The asylum has been very free from infectious disease. In May last (1903) two nurses contracted enteric fever and recovered, but no case of the disease has occurred during the last ten months." Colitis or dysentery was prevalent on the female side of the asylum till September, 1903, but since then "there has been a great diminution in the number of cases and there seems reason to hope that the epidemic, which commenced five years ago, is now practically at an end, but sporadic cases will probably continue to occur." Much important structural and sanitary work has been carried out, including improved ventilation of the staircases and the establishment of a new and complete system of electric fire alarms. The Commissioners in Lunacy state in their report that the general condition and management of the asylum were deserving of very favourable mention, that the day rooms were in very good order, clean, bright and comfortable, that the dormitories were wholesome and the bedding in good order, that all the exit doors of the wards were now made to open outwards with a view to facilitate escape in case of fire, that the condition of the patients was tidy, and that the medical case-books were intelligently and well kept. The committee of management states that it has under consideration the question of erecting permanent buildings to replace the annexe which was destroyed by fire. All the structures will be of ground-floor height and the cost of building is estimated at £70,000 exclusive of equipment.

London County Asylum, The Manor, Epsom (Report for the Year ending March 31st, 1904).—The average number of patients resident during the year consisted of 691 females. The admissions during the year amounted to 147 females. Of these 138 were first admissions. Dr. W. Ireland Donaldson, the medical superintendent, states in his report that the admissions were 43 less than in the previous year. The chief causes of insanity in the patients admitted were alcoholic intemperance and heredity, the former occurring in 32 cases and the latter in 41. The latter number is probably less than the actual cases of hereditary taint. In 25 cases the cause of the attack could not be determined, no history being obtainable. "The past year," says Dr. Donaldson, "has been a particularly free one from special disease, with the exception of dysentery, which, I am glad to say, seems to be on the decline, nine cases only having occurred, as against 18 in the previous year. I cannot but believe that with the opening up of the corridors—which took place last year to minimise the risks from fire—a great improvement in the health of the asylum, both among the patients and staff, will ensue, and although the past year is supposed to have been a very healthy one, I think that the small death-rate ..... was due in some measure to the very efficient system of ventilation which prevails in the asylum. ..... The health of the staff has been very satisfactory during the year, few cases of illness having occurred, and none at all attributable to the partly open corridors." The number of patients discharged as recovered during the year amounted to 50, or 7·3 per cent. of the average number resident. The deaths during the year amounted to 33, or 4·9 per cent. as calculated on the same basis. Of the deaths two each were due to diabetes and colitis, three to general paralysis of the insane, five to pulmonary tuberculosis, seven each to cardiac disease and pneumonia, and the rest to other causes. Fire drills for members of the staff continue to take place daily in the wards, and two men continue on night fire duty, one patrolling the corridors inside while the other walks outside. The villa for male patients has been completed and 47 patients were admitted in April, 1904. The Commissioners in Lunacy state in their report that the asylum appeared to be maintained throughout in excellent order, that the precautions against fire were ample, that the day rooms and dormitories were clean and well ventilated, that the behaviour of the patients was quiet and their personal condition comfortable, and that the medical case-books were well and regularly kept. The committee of management states in its report that the male villa will eventually accommodate 60 patients and that its cost and equipment have not exceeded £10,750. The erection of two more blocks to accommodate 60 female patients in each is under consideration. Alterations to corridors and the provision of additional doors at ward entrances to facilitate exit and to minimise the danger of fire have been completed at a cost of £3065.

Stirling District Asylum (Report for the Year ending May 15th, 1904).—From this report it appears that 255 patients were admitted into the Stirling District Asylum during the year under notice, but by the discharge of 74 patients "unrecovered" and of 89 "recovered" and the deaths of 92 the year closed with the same number on the books as at the commencement (684). This is a small resident population with an admission-rate of over 200, which rate is increasing. This satisfactory state of things is to be placed to the credit of the boarding-out system. Dr. G. M. Robertson, the medical superintendent, states that during the last three years 203 patients who were unrecovered but who had become harmless and manageable have been removed from the asylum and the greater number provided for in the homes of their natural guardians. Amongst these, we gather, are the 74 referred to above. The advantage of this plan to the ratepayers is twofold, for the patients are maintained at diminished cost and there is no need to build or to extend institutions for their detention. Dr. Robertson analyses the admissions of alcoholic insanity for a period of years. It is stated that "the broad facts are substantiated that alcohol is the most important single factor in the production of insanity amongst men in this country" and that lately there has been "an enormous increase in the amount of alcoholic insanity." Dr. Robertson agrees with the explanation which has been put forward as at any rate partly accounting for the recent increase in alcoholic insanity (now passing off), to the effect that the late war absorbed large numbers of able-bodied young men, who left the country and gave the lowest class of labourer a chance of employment and steady wages. "His sudden good fortune was too much for his powers of self-control." The excesses of this class made a substantial increase, we are informed, to the amount of alcoholic insanity admitted to the asylum. A feature of this asylum is the nursing system. In place of the usual asylum plan, according to which the male and female patients respectively are attended by persons of their own sex, the like principle being observed in respect to the head attendants, the method followed in the Stirling District Asylum is that of having female nurses in the sick and infirm wards of the male side, whilst the matron is at the head of the whole nursing staff. Under her are five assistant matrons, who are certificated hospital nurses, and whose presence in the wards, both male and female, is relied upon to maintain discipline and to set a worthy example. The same principle is adopted in night as well as day nursing. The Commissioners in Lunacy in the course of their annual reports refer in favourable terms to the nursing arrangements and to the results of the boarding-out system. These reports state that the fire-extinguishing arrangements are unsatisfactory, the pressure of water in particular being inadequate.

PLYMOUTH ROYAL EYE INFIRMARY.—The eighty-third annual meeting of the subscribers to the Plymouth Royal Eye Infirmary was held on Jan. 11th under the presidency of the mayor. The medical report stated that 2530 patients had been treated during 1904, as compared with 2285 in 1903. The financial statement showed that the income amounted to £1555, the expenditure being £1302. The committee states that the total outlay upon the new buildings had been £19,924 and at present only about £300 of that sum remain to be raised to make the institution entirely free from debt.

VITAL STATISTICS.

ANNUAL BIRTH-RATES AND DEATH-RATES FROM THE SEVEN CHIEF EPIDEMIC DISEASES IN ENGLAND AND WALES DURING 1904.

—	Annual rates per 1000 living.			Infant mortality:—Annual death-rate of infants under one year per 1000 births.
	Births.	Deaths from all causes.	Deaths from seven chief epidemic diseases.	
England and Wales	27·9	16·2	1·94	146
Rural England and Wales	28·8	15·3	1·28	125
76 great towns	29·1	17·2	2·49	160
142 smaller towns	27·5	15·6	2·02	154

These rates are subject to revision.

We are indebted to the Registrar-General for the above death-rates for the urban and rural areas of England and Wales in the year 1904. We publish them for the information especially of medical officers of health who require these data for the compilation of their annual reports.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8405 births and 5419 deaths were registered during the week ending Jan. 21st. The annual rate of mortality in these towns, which had been 22·4, 19·9, and 17·5 per 1000 in the three preceding weeks, rose again last week to 18·1 per 1000. In London the death-rate was 16·6 per 1000, while it averaged 18·7 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·7 in King's Norton, 10·8 in Smethwick, 11·2 in Walthamstow, 11·8 in Leyton, 11·9 in Burton-on-Trent, 12·4 in Hornsey, and 12·6 in Bournemouth; the highest rates were 24·4 in St. Helen's, 25·0 in Hanley, 25·8 in Walsall, 26·0 in Grimsby, 27·6 in Swansea, 27·8 in West Hartlepool, 32·3 in Middlesbrough, and 32·5 in Merthyr Tydfil. The 5419 deaths in these towns last week included 358 which were referred to the principal infectious diseases, against 475, 399, and 378 in the three preceding weeks; of these 358 deaths, 92 resulted from whooping-cough, 88 from measles, 63 from diphtheria, 44 from diarrhœa, 38 from scarlet fever, 31 from "fever" (principally enteric), and two from small-pox. No death from any of these diseases was registered last week in Hornsey, Southampton, Reading, Great Yarmouth, Plymouth, Devonport, King's Norton, Warrington, Bury, Barrow-in-Furness, or Newport (Mon.); while the highest death-rates from the principal infectious diseases were recorded in West Ham, Hanley, Grimsby, Nottingham, St. Helen's, Salford, Preston, Stockton-on-Tees, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Leyton, Ipswich, West Bromwich, Grimsby, Nottingham, St. Helen's, Stockton-on-Tees, and Merthyr Tydfil; from scarlet fever in Northampton and St. Helen's; from diphtheria in Grimsby and Rochdale; from whooping-cough in East Ham, Bristol, Grimsby, Halifax, Bradford, and Sunderland; from "fever" in Salford; and from diarrhœa in Preston. Of the two fatal cases of small-pox registered in these towns last week one belonged to Burnley and one to Hull. The number of small-pox cases under treatment in the Metropolitan Asylums Hospitals at the end of last week was 18, against 17, 18, and 19 at the end of the three preceding weeks; one new case was admitted during the week, against five, one, and one in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2390, 2309, and 2192 on the three preceding Saturdays, had further declined to 2174 on Saturday last, Jan. 21st; 225 new cases were admitted during the week, against 201, 187, and 194 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 521, 443, and 301 in the three preceding weeks, rose again last week to 377, and were 22 above the number in the corresponding period of last year. The causes of 79, or 1·5 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Salford, Leeds, Hull, Cardiff, and in 39 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Bootle, St. Helen's, Warrington, Manchester, and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 21·6, 20·6, and 21·6 per 1000 in the three preceding weeks, declined again to 20·1 per 1000 during the week ending Jan. 21st, but was 2·0 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·7 in Perth and 16·7 in Edinburgh, to 22·1 in Aberdeen and 24·5 in Greenock. The 674 deaths in these towns included 33 which were referred to whooping-cough, 17 to diarrhœa, 15 to measles, three to diphtheria, three to "fever" (including one case of typhus), and one to small-pox, but not any to scarlet fever. In all, 72 deaths resulted from these principal infectious diseases last week, against 78, 79, and 85 in the three preceding weeks. These 72 deaths were equal to an annual rate of 2·1 per 1000, which was 0·9 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 40, 37, and 45 in the three preceding weeks, declined again last week to 33, of which 27 occurred in Glasgow and three in Aberdeen. The deaths from diarrhœa, which had been 12, 13, and 16 in the three preceding weeks, further rose to 17 last week and included 12 in Glasgow and three in Dundee. The fatal cases of measles, which had been 20, 14, and 12 in the three preceding weeks, rose again last week to 15, of which seven were registered in Aberdeen, four in Glasgow, and three in Leith. The deaths from "fever," which had been eight and four in the two preceding weeks, further declined to three last week and included one fatal case of typhus in Aberdeen. The deaths referred to diseases of the respiratory organs in these towns, which had been 184, 182, and 183 in the three preceding weeks, declined last week to 156, and showed a decline of 11 from the number in the corresponding period of last year. The causes of 16, or more than 2 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·0, 25·6, and 22·6 per 1000 in the three preceding weeks, further declined to 21·2 per 1000 during the week ending Jan. 21st. During the past four weeks the death-rate has averaged 23·6 per 1000, the rates during the same period being 18·0 in London and 18·4 in Edinburgh. The 154 deaths of persons belonging to Dublin registered during the week under notice showed a decline of ten from the number in the preceding week and included ten which were referred to the principal infectious diseases, against five and 21 in the two preceding weeks; of these, five resulted from measles, two from scarlet fever, two from diphtheria, and one from "fever," but not any from small-pox, whooping-cough, or diarrhœa. These 10 deaths were equal to an annual rate of 1·4 per 1000, the death-rates last week from the principal infectious diseases being 0·9 in London and 0·5 in Edinburgh. The fatal cases of measles, which had been 16, three, and 12 in the three preceding weeks, declined again last week to five. The 10 deaths from diphtheria corresponded with the number in the preceding week, while the mortality from scarlet fever showed an increase. The 154 deaths in Dublin last week included 23 of children under one year of age and 44 of persons aged 60 years and upwards; the deaths of infants were nine below the number in the preceding week, while those of elderly persons showed no variation. Four inquest cases and five deaths from violence were registered; and 61, or nearly two-fifths, of the deaths occurred in public institutions. The causes of 12, or nearly 8 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

THE DIRECTOR-GENERAL OF THE INDIAN MEDICAL SERVICE.

Lieutenant-Colonel Gerald Bomford, I.M.S., C.I.E., has been appointed Director-General of the Indian Medical Service. He entered the Indian Medical Service as Assistant Surgeon in 1874 and reached the rank of Brigade-Surgeon-Lieutenant-Colonel ten years later. He served with the Perak Expedition in 1875–76, for which he was awarded the medal and clasp.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. Patterson to the *Vivid* and F. J. Lilly to the *King Edward VII.* Staff Surgeon O. Rees to the *Thames.* Surgeons: R. W. G. Stewart to the *King Edward VII.* and L. A. Baiss to the *Barham.*

ROYAL ARMY MEDICAL CORPS.

Major T. H. F. Clarkson has been appointed Senior Medical Officer, Jersey.

INDIAN MEDICAL SERVICE.

Major A. J. Macnab, joint civil surgeon, Simla, is appointed to the medical charge of the Army Headquarters Staff and establishments remaining at Simla during the winter.

VOLUNTEER CORPS.

Submarine Miners: The Mersey Division: Surgeon-Lieutenant R. Jones resigns his commission (dated Jan. 21st, 1905).

Rifle: 1st Roxburgh and Selkirk (The Border); Supernumerary Brigade-Surgeon-Lieutenant-Colonel G. H. Turnbull (Senior Medical Officer, Scottish Border Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Jan. 21st, 1905). 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant T. Beard to be Surgeon-Captain (dated Jan. 21st, 1905).

MENTIONED IN DESPATCHES.

In despatches relating to the operations in Northern Nigeria in 1903 the Acting High Commissioner states: "The medical staff consisted of Dr. H. P. Lobb and Dr. W. J. Healey, who were devoted to the care of the sick and wounded. I consider them both deserving of much credit."

THE NEW ARMY SCHEME.

We gather from what Mr. Arnold-Forster told a deputation the other day that it was impossible at present to commence the formation of territorial regiments. It appears that the number of short-service men in the army is so great that it is necessary to continue the long-service recruiting until a sufficient nucleus of long-service men has been obtained to insure the provision of drafts for India.

A RUSSIAN HOSPITAL SHIP.

We have received from a correspondent some notes of a visit which was made to the Russian hospital ship *Orel* in the month of December, 1904. The *Orel* was one of the volunteer fleet, was fitted up for hospital service in about six weeks, and, as could hardly help being the case, presented many of the objectionable features inseparable from the conversion of an ordinary vessel into a floating hospital. The operating room was abaft the captain's cabin on what a landsman would term the promenade deck. It was "all tiled in," was well lighted, and measured about 15 feet by 12 feet. Underneath it was a sort of waiting room for patients who, when their turn came, were taken up in a roundabout manner through the hatchways. A lift was provided but the patients could not be brought directly into the operating room on account of its position with reference to the wardroom used by the ship's officers. The cots were all in the space where the holds would ordinarily be. They were very close together, one above another, so that there did not seem to be much cubic space per man. Fans with overhead conduits were provided for the extraction of foul air but there was no forced admission of fresh air. The lower deck was just above the water-line and of course the scuttle would have to be closed at sea, so that on the whole it was probable that the atmosphere would be anything but good. Accommodation was supposed to be provided for 460 men, in addition to which there were 18 single cabins for officers and one larger cabin which would hold about six juniors. With that number of patients, however, there would certainly be great overcrowding. Apparently the refrigerating room was large enough and a sufficient daily supply of ice could be made. The cots were partly of English make and partly of French make, the former being preferred because they have springs. The mattresses were of French make, they were watertight, and, according to tests which had been made, each of them was capable of supporting seven men in the water. The method of taking patients on board seemed as if it would be very slow. They were to be placed in a perforated steel cradle which could be slung in a variety of positions; this cradle would then be hoisted in by a derrick and would be run along a little overhead rail. Good photographs of the *Orel* and of six other vessels belonging to the Russian Baltic fleet appeared in the *Engineer* of Jan. 20th.

THE WAR IN THE FAR EAST.

Public attention is no longer directed to the theatre of war in the Far East but has become focussed upon the stupendous events making up the tragic drama now going on in Russia. We are, as it were, seeing history in the very process of making and the present situation is a very remarkable one. Japan has found by far her most powerful ally in the internal condition of Russia and in the revolutionary spirit and disaffection which are apparently rapidly spreading throughout that empire. The unpopularity of the Russo-Japanese war in Russia has furnish[ed] occasion for a sudden outburst of deep-seated pent-up discontent on the part of its populati[on] as it may, the fact remains that it is no[w] Russia and not the war in the Far East t[he] in everybody's minds. There has been no [a]ance in the Manchurian armies since we [left] were, it is said, 15,000 disabled men [in] hospitals at Port Arthur at the time [of] whom 500 have since died.

The Irkutsk correspondent of the *Nov[oe]* "that the hospital accommodation fr[om] lacks comprehensiveness and only after [a] has the necessity for 80 fresh hospitals [been] The distance from the front indicates th[e] railway as the area for treating wounds in [the] after operations. This is essential so as [to] neglect of orthopædic treatment of the extrem[ities] neglect on a long journey causes many cases of [in]curable contractions. It means returning many [to] Russia unfit for work when such a result can be avoided. Many surgical, internal, and venereal cases are also imperfectly treated and there is a complete absence of Roentgen ray apparatus. Irkutsk, with its fine climate, is not fully utilised. It should be the headquarters for operations behind the base; but its dependence on Omsk causes apathy, misunderstanding, and friction. The fine doctors of the reserve who serve the Red Cross Society so well are stultified here."

The executive committee of the Red Cross Society proposes to sell scrip to the value of 400,000 roubles to meet impending outgoings in view of the insufficiency of ready money in the society's hands.

His Majesty's storeship *Humber* has left Hong-Kong carrying a fleet surgeon and medical stores and appliances for Wei-hai-wei, Port Arthur, and Dalny.

Major H. F. Cleveland, I.M.S., it is officially announced, has, with the consent of the Government of India, been appointed medical officer to the Amir and has on arrival at Kabul been cordially received by the Amir.

The Secretary of State has decided that the rates of half-pay of officers of the Indian Medical Service shall in future be the same as those laid down in the Royal Warrant for those of the same rank in the Royal Army Medical Corps.

MANCHESTER MEDICAL SOCIETY.—The annual meeting of this society was held on Jan. 11th for the election of office-bearers. Mr. W. Thorburn was elected President. Dr. E. M. Brockbank described an old MS. on Urines in the possession of the society, some pages being reproduced by lantern slides.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—In his admirable Bradshaw lecture[1] Dr. F. Foord Caiger has made a definite and weighty pronouncement in favour of the general adoption in hospitals of the cold-bath treatment of typhoid fever and this has been endorsed by a leading article in THE LANCET. Consequently it is to be anticipated that an extension of the system will result in this country such as has already occurred in so many other countries. In these circumstances it may prove of advantage to emphasise not only the potentialities but also the limitations of the treatment. Dr. Caiger has referred with approval to the results obtained in the Brisbane General Hospital. From May 15th, 1882, to Dec. 31st, 1886, a period of nearly five years, 1828 cases were treated expectantly: of these 271 died, a case mortality of 14·8 per cent. On Jan. 1st, 1887, the cold-bath treatment was introduced suddenly, every case that was admitted on or after that day being submitted systematically to a course of cold bathing similar in detail to that recommended by Brand. The only exceptions were: (1) a very few patients (practically limited to the first year) who refused to submit to it; (2) cases in which the temperature in the rectum failed to attain 102·2° F.; and (3) cases which contra-indicating conditions, such as hæmorrhage, ...on, and extreme cardiac failure, existed. This ... pursued without interruption down to Dec. 31st, ...g these ten years 1902 cases were treated; of ...ed, a case mortality of 7·5 per cent. The ...h periods include all cases admitted to the ... those which were moribund on admission and ...se, were not bathed. Under the bath treat..., an improvement occurred in the hospital ...phoid fever amounting to practically 50 per ... words, seven out of every 100 cases admitted ..., the average through the alteration of treat...rmably, Osler says[2]: "The cold-bath treatment, ...ced, appears to save from six to eight in each ... typhoid patients admitted to the care of the ...physician."

...results obtained at the Brisbane Hospital were due ...estionably to the fact that the treatment was regarded from the very commencement as a prophylactic against the consequences of protracted pyrexia and not as a curative measure to be adopted in special cases. To obtain the greatest possible benefit from the treatment it is essential (1) that it be commenced at the earliest possible period of the fever before indications of danger have appeared; and (2) that all cases not presenting contra-indications should be bathed, for experience teaches that at present it is not possible to foresee in any individual case the duration and evolution of the disease.

It may be doubted whether in this country the fall in hospital mortality will be proportionate to that which occurred in Queensland. In Queensland the hospital accommodation is large compared to the population and a high proportion of hospital patients live in boarding houses and hotels, not in their own homes. Hence I am inclined to think typhoid fever patients seek and obtain earlier admission and it may be that a large number of mild cases are admitted into hospital. Nevertheless, the fall in mortality in this country should be marked; I do not think a reduction of from 15 to 9 per cent. would be an excessive estimate. The limitations to the treatment depend upon the fact that it has little, if any, influence to avert death from hæmorrhage or perforation. From August 1st, 1885, to Dec. 31st, 1886, 586 cases were treated expectantly. Of these 11 died from hæmorrhage and 17 from perforation. The percentage mortality of each accident to total cases was therefore 1·88 and 2·9 respectively, or together 4·71. Of the 1902 cases treated by cold bathing during the ten years from Jan. 1st, 1887, to Dec. 31st, 1896, 23 died from hæmorrhage and 56 from perforation. The percentage mortality of each accident to total cases was therefore 1·2 and 2·9 respectively, or together 4·1. The figures quoted refer not to the frequency of these accidents but to their mortality. Perforation is almost of necessity fatal; hence the distinction is here unimportant. But hæmorrhage results in death only in some 25 per cent. of the cases attacked; and there is reason to think that the slightly diminished mortality from hæmorrhage under cold bathing depends upon a slightly diminished fatality, not upon a diminished occurrence of this accident. The conclusion therefore is that the cold bath treatment exerts no effect upon the occurrence of hæmorrhage or perforation one way or the other and that practically the whole saving of life results from the reduction of the "pyrexial" sources of death.

The impotence of the cold-bath treatment to avert the occurrence of hæmorrhage and perforation has an important bearing upon the prognosis of typhoid fever in the two sexes. Under expectant treatment Murchison found the female case mortality higher than the male. This, he pointed out, was in spite of the undoubted fact that perforation is 2·3 times more frequent in men; in my experience much the same is true of hæmorrhage. Thus while men are more prone than women to succumb to the intestinal lesion the reverse is true to an even greater extent with regard to the pyrexia. It might be anticipated, therefore, that the bath treatment would influence more favourably the female than the male mortality, an anticipation which is fully borne out by statistics. Under expectant treatment 1160 males and 668 females were admitted. Of the former 164 died, a mortality of 14·14 per cent.; of the latter 107 died, a mortality of 16 per cent. These results accord fairly with Murchison's figures. In striking contrast, however, were the results obtained under cold bathing. By that system 1188 males and 714 females were treated. Of the former 103 died, a mortality of 8·7 per cent.; of the latter 40 died, a mortality of 5·6 per cent. Thus while the male case mortality fell from 14·14 per cent. to 8·7 per cent., a reduction of 38 per cent., the female case mortality fell from 16·02 to 5·6 per cent., a reduction of 65 per cent. It would be easy to demonstrate that this much greater relative success obtained by cold bathing in women is almost entirely due to their comparative immunity from hæmorrhage and perforation.

It is satisfactory to read that Dr. Caiger disbelieves in the utility of giving astringents in the intestinal hæmorrhage of typhoid fever, and that he is inclined to think that drugs of the vaso-constrictor class, such as ergot and adrenalin, if they produce any effect at all tend to increase the bleeding. There is no doubt that adrenalin has prolonged hæmoptysis in some cases.[3] On the other hand, there is equally no doubt that the inhalation of amyl nitrite, the most rapid vaso-dilator known, is capable of immediately stopping hæmoptysis in the great majority of cases.[4] And there is good reason to anticipate that the same drug would be effectual also in hæmorrhage from the systemic arterioles. It is doubtful, however, whether amyl nitrite inhalation would be of use in the intestinal hæmorrhage of typhoid fever since the action of the drug is fleeting and it is usually impossible to fix the exact time of the occurrence of bleeding. In one case Dr. R. B. Huxtable of the Charters Towers Hospital, Queensland, used amyl nitrite for severe typhoid hæmorrhage and the patient recovered. The only drug which is of proved value in typhoid hæmorrhage is opium given in full doses (40 to 60 minims of the tincture) as recommended by Broadbent. The patient should then be immobilised on a water bed and all food and drink stopped, except a little ice to suck. Intestinal hæmorrhage, except when it amounts to a mere trace before the tenth day of fever, and this only in cases where the date of onset is definitely known, necessitates the abandonment of bathing for a time. This enforced cessation of bathing frequently alters the whole aspect of the case. Quite commonly the patient now falls rapidly into the typhoid state, with high fever, delirium, dry brown tongue, sordes and tremulous muscles, and unless great care be taken a sacral bedsore commences and quickly spreads. This sudden change for the worse is the strongest evidence of the efficacy of systematic cold bathing in averting the typhoid state. The question as to how soon to resume bathing after the hæmorrhage has ceased is probably the most delicate and difficult of all the therapeutic problems presented by typhoid fever.

[1] THE LANCET, Nov. 26th, 1904, p. 1467.
[2] Johns Hopkins Hospital Reports, Baltimore, 1895.
[3] Dr. J. Gray Duncanson, Brit. Med. Jour., March 12th, 1904.
[4] THE LANCET, August 20th (p. 522), and Oct. 1st (p. 942), 1904.

THE SERVICES.

THE DIRECTOR-GENERAL OF THE INDIAN MEDICAL SERVICE.

Lieutenant-Colonel Gerald Bomford, I.M.S., C.I.E., has been appointed Director-General of the Indian Medical Service. He entered the Indian Medical Service as Assistant Surgeon in 1874 and reached the rank of Brigade-Surgeon-Lieutenant-Colonel ten years later. He served with the Perak Expedition in 1875–76, for which he was awarded the medal and clasp.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. Patterson to the *Viriđ* and F. J. Lilly to the *King Edward VII.* Staff Surgeon O. Rees to the *Thames.* Surgeons: R. W. G. Stewart to the *King Edward VII.* and L. A. Baiss to the *Barham.*

ROYAL ARMY MEDICAL CORPS.

Major T. H. F. Clarkson has been appointed Senior Medical Officer, Jersey.

INDIAN MEDICAL SERVICE.

Major A. J. Macnab, joint civil surgeon, Simla, is appointed to the medical charge of the Army Headquarters Staff and establishments remaining at Simla during the winter.

VOLUNTEER CORPS.

Submarine Miners: The Mersey Division: Surgeon-Lieutenant R. Jones resigns his commission (dated Jan. 21st, 1905).

Rifle: 1st Roxburgh and Selkirk (The Border); Supernumerary Brigade-Surgeon-Lieutenant-Colonel G. H. Turnbull (Senior Medical Officer, Scottish Border Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Jan. 21st, 1905). 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant T. Beard to be Surgeon-Captain (dated Jan. 21st, 1905).

MENTIONED IN DESPATCHES.

In despatches relating to the operations in Northern Nigeria in 1903 the Acting High Commissioner states: "The medical staff consisted of Dr. H. P. Lobb and Dr. W. J. Healey, who were devoted to the care of the sick and wounded. I consider them both deserving of much credit."

THE NEW ARMY SCHEME.

We gather from what Mr. Arnold-Forster told a deputation the other day that it was impossible at present to commence the formation of territorial regiments. It appears that the number of short-service men in the army is so great that it is necessary to continue the long-service recruiting until a sufficient nucleus of long-service men has been obtained to insure the provision of drafts for India.

A RUSSIAN HOSPITAL SHIP.

We have received from a correspondent some notes of a visit which was made to the Russian hospital ship *Orel* in the month of December, 1904. The *Orel* was one of the volunteer fleet, was fitted up for hospital service in about six weeks, and, as could hardly help being the case, presented many of the objectionable features inseparable from the conversion of an ordinary vessel into a floating hospital. The operating room was abaft the captain's cabin on what a landsman would term the promenade deck. It was "all tiled in," was well lighted, and measured about 15 feet by 12 feet. Underneath it was a sort of waiting room for patients who, when their turn came, were taken up in a roundabout manner through the hatchways. A lift was provided but the patients could not be brought directly into the operating room on account of its position with reference to the wardroom used by the ship's officers. The cots were all in the space where the holds would ordinarily be. They were very close together, one above another, so that there did not seem to be much cubic space per man. Fans with overhead conduits were provided for the extraction of foul air but there was no forced admission of fresh air. The lower deck was just above the water-line and of course the scuttle would have to be closed at sea, so that on the whole it was probable that the atmosphere would be anything but good. Accommodation was supposed to be provided for 460 men, in addition to which there were 18 single cabins for officers and one larger cabin which would hold about six juniors. With that number of patients, however, there would certainly be great overcrowding. Apparently the refrigerating room was large enough and a sufficient daily supply of ice could be made. The cots were partly of English make and partly of French make, the former being preferred because they have springs. The mattresses were of French make, they were watertight, and, according to tests which had been made, each of them was capable of supporting seven men in the water. The method of taking patients on board seemed as if it would be very slow. They were to be placed in a perforated steel cradle which could be slung in a variety of positions; this cradle would then be hoisted in by a derrick and would be run along a little overhead rail. Good photographs of the *Orel* and of six other vessels belonging to the Russian Baltic fleet appeared in the *Engineer* of Jan. 20th.

THE WAR IN THE FAR EAST.

Public attention is no longer directed to the theatre of war in the Far East but has become focussed upon the stupendous events making up the tragic drama now going on in Russia. We are, as it were, seeing history in the very process of making and the present situation is a very remarkable one. Japan has found by far her most powerful ally in the internal condition of Russia and in the revolutionary spirit and disaffection which are apparently rapidly spreading throughout that empire. The unpopularity of the Russo-Japanese war in Russia has furnished an occasion for a sudden outburst of deep-seated and long pent-up discontent on the part of its population. Be this as it may, the fact remains that it is now the state of Russia and not the war in the Far East that is uppermost in everybody's minds. There has been no change of importance in the Manchurian armies since we last wrote. There were, it is said, 15,000 disabled men altogether in the hospitals at Port Arthur at the time of its surrender, of whom 500 have since died.

The Irkutsk correspondent of the *Novoe Vremya* complains "that the hospital accommodation from Baikal to Omsk lacks comprehensiveness and only after ten months of war has the necessity for 80 fresh hospitals become recognised. The distance from the front indicates this section of the railway as the area for treating wounds in the second stage after operations. This is essential so as to obviate the neglect of orthopædic treatment of the extremities, as such neglect on a long journey causes many cases of inveterate, incurable contractions. It means returning many men to Russia unfit for work when such a result can be avoided. Many surgical, internal, and venereal cases are also imperfectly treated and there is a complete absence of Roentgen ray apparatus. Irkutsk, with its fine climate, is not fully utilised. It should be the headquarters for operations behind the base; but its dependence on Omsk causes apathy, misunderstanding, and friction. The fine doctors of the reserve who serve the Red Cross Society so well are stultified here."

The executive committee of the Red Cross Society proposes to sell scrip to the value of 400,000 roubles to meet impending outgoings in view of the insufficiency of ready money in the society's hands.

His Majesty's storeship *Humber* has left Hong-Kong carrying a fleet surgeon and medical stores and appliances for Wei-hai-wei, Port Arthur, and Dalny.

Major H. F. Cleveland, I.M.S., it is officially announced, has, with the consent of the Government of India, been appointed medical officer to the Amir and has on arrival at Kabul been cordially received by the Amir.

The Secretary of State has decided that the rates of half-pay of officers of the Indian Medical Service shall in future be the same as those laid down in the Royal Warrant for those of the same rank in the Royal Army Medical Corps.

MANCHESTER MEDICAL SOCIETY.—The annual meeting of this society was held on Jan. 11th for the election of office-bearers. Mr. W. Thorburn was elected President. Dr. E. M. Brockbank described an old MS. on Urines in the possession of the society, some pages being reproduced by lantern slides.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—In his admirable Bradshaw lecture[1] Dr. F. Foord Caiger has made a definite and weighty pronouncement in favour of the general adoption in hospitals of the cold-bath treatment of typhoid fever and this has been endorsed by a leading article in THE LANCET. Consequently it is to be anticipated that an extension of the system will result in this country such as has already occurred in so many other countries. In these circumstances it may prove of advantage to emphasise not only the potentialities but also the limitations of the treatment. Dr. Caiger has referred with approval to the results obtained in the Brisbane General Hospital. From May 15th, 1882, to Dec. 31st, 1886, a period of nearly five years, 1828 cases were treated expectantly: of these 271 died, a case mortality of 14·8 per cent. On Jan. 1st, 1887, the cold-bath treatment was introduced suddenly, every case that was admitted on or after that day being submitted systematically to a course of cold bathing similar in detail to that recommended by Brand. The only exceptions were: (1) a very few patients (practically limited to the first year) who refused to submit to it; (2) cases in which the temperature in the rectum failed to attain 102·2° F.; and (3) cases in which contra-indicating conditions, such as hæmorrhage, perforation, and extreme cardiac failure, existed. This course was pursued without interruption down to Dec. 31st, 1896. During these ten years 1902 cases were treated; of these 142 died, a case mortality of 7·5 per cent. The figures in both periods include all cases admitted to the hospital, even those which were moribund on admission and which, of course, were not bathed. Under the bath treatment, therefore, an improvement occurred in the hospital mortality of typhoid fever amounting to practically 50 per cent.—in other words, seven out of every 100 cases admitted were saved on the average through the alteration of treatment. Conformably, Osler says[2]: "The cold-bath treatment, rigidly enforced, appears to save from six to eight in each century of typhoid patients admitted to the care of the hospital physician."

The results obtained at the Brisbane Hospital were due unquestionably to the fact that the treatment was regarded from the very commencement as a prophylactic against the consequences of protracted pyrexia and not as a curative measure to be adopted in special cases. To obtain the greatest possible benefit from the treatment it is essential (1) that it be commenced at the earliest possible period of the fever before indications of danger have appeared; and (2) that all cases not presenting contra-indications should be bathed, for experience teaches that at present it is not possible to foresee in any individual case the duration and evolution of the disease.

It may be doubted whether in this country the fall in hospital mortality will be proportionate to that which occurred in Queensland. In Queensland the hospital accommodation is large compared to the population and a high proportion of hospital patients live in boarding houses and hotels, not in their own homes. Hence I am inclined to think typhoid fever patients seek and obtain earlier admission and it may be that a large number of mild cases are admitted into hospital. Nevertheless, the fall in mortality in this country should be marked; I do not think a reduction of from 15 to 9 per cent. would be an excessive estimate. The limitations to the treatment depend upon the fact that it has little, if any, influence to avert death from hæmorrhage or perforation. From August 1st, 1885, to Dec. 31st, 1886, 586 cases were treated expectantly. Of these 11 died from hæmorrhage and 17 from perforation. The percentage mortality of each accident to total cases was therefore 1·88 and 2·9 respectively, or together 4·71. Of the 1902 cases treated by cold bathing during the ten years from Jan. 1st, 1887, to Dec. 31st, 1896, 23 died from hæmorrhage and 56 from perforation. The percentage mortality of each accident to total cases was therefore 1·2 and 2·9 respectively, or together 4·1. The figures quoted refer not to the frequency of these accidents but to their mortality. Perforation is almost of necessity fatal; hence the distinction is here unimportant. But hæmorrhage results in death only in some 25 per cent. of the cases attacked; and there is reason to think that the slightly diminished mortality from hæmorrhage under cold bathing depends upon a slightly diminished fatality, not upon a diminished occurrence of this accident. The conclusion therefore is that the cold bath treatment exerts no effect upon the occurrence of hæmorrhage or perforation one way or the other and that practically the whole saving of life results from the reduction of the "pyrexial" sources of death.

The impotence of the cold-bath treatment to avert the occurrence of hæmorrhage and perforation has an important bearing upon the prognosis of typhoid fever in the two sexes. Under expectant treatment Murchison found the female case mortality higher than the male. This, he pointed out, was in spite of the undoubted fact that perforation is 2·3 times more frequent in men; in my experience much the same is true of hæmorrhage. Thus while men are more prone than women to succumb to the intestinal lesion the reverse is true to an even greater extent with regard to the pyrexia. It might be anticipated, therefore, that the bath treatment would influence more favourably the female than the male mortality, an anticipation which is fully borne out by statistics. Under expectant treatment 1160 males and 688 females were admitted. Of the former 164 died, a mortality of 14·14 per cent.; of the latter 107 died, a mortality of 16 per cent. These results accord fairly with Murchison's figures. In striking contrast, however, were the results obtained under cold bathing. By that system 1188 males and 714 females were treated. Of the former 103 died, a mortality of 8·7 per cent.; of the latter 40 died, a mortality of 5·6 per cent. Thus while the male case mortality fell from 14·14 per cent. to 8·7 per cent., a reduction of 38 per cent., the female case mortality fell from 16·02 to 5·6 per cent., a reduction of 65 per cent. It would be easy to demonstrate that this much greater relative success obtained by cold bathing in women is almost entirely due to their comparative immunity from hæmorrhage and perforation.

It is satisfactory to read that Dr. Caiger disbelieves in the utility of giving astringents in the intestinal hæmorrhage of typhoid fever, and that he is inclined to think that drugs of the vaso-constrictor class, such as ergot and adrenalin, if they produce any effect at all tend to increase the bleeding. There is no doubt that adrenalin has prolonged hæmoptysis in some cases.[3] On the other hand, there is equally no doubt that the inhalation of amyl nitrite, the most rapid vaso-dilator known, is capable of immediately stopping hæmoptysis in the great majority of cases.[4] And there is good reason to anticipate that the same drug would be effectual also in hæmorrhage from the systemic arterioles. It is doubtful, however, whether amyl nitrite inhalation would be of use in the intestinal hæmorrhage of typhoid fever since the action of the drug is fleeting and it is usually impossible to fix the exact time of the occurrence of bleeding. In one case Dr. R. B. Huxtable of the Charters Towers Hospital, Queensland, used amyl nitrite for severe typhoid hæmorrhage and the patient recovered. The only drug which is of proved value in typhoid hæmorrhage is opium given in full doses (40 to 60 minims of the tincture) as recommended by Broadbent. The patient should then be immobilised on a water bed and all food and drink stopped, except a little ice to suck. Intestinal hæmorrhage, except when it amounts to a mere trace before the tenth day of fever, and this only in cases where the date of onset is definitely known, necessitates the abandonment of bathing for a time. This enforced cessation of bathing frequently alters the whole aspect of the case. Quite commonly the patient now falls rapidly into the typhoid state, with high fever, delirium, dry brown tongue, sordes and tremulous muscles, and unless great care be taken a sacral bedsore commences and quickly spreads. This sudden change for the worse is the strongest evidence of the efficacy of systematic cold bathing in averting the typhoid state. The question as to how soon to resume bathing after the hæmorrhage has ceased is probably the most delicate and difficult of all the therapeutic problems presented by typhoid fever.

[1] THE LANCET, Nov. 26th, 1904, p. 1467.
[2] Johns Hopkins Hospital Reports, Baltimore, 1895.
[3] Dr. J. Gray Duncanson, Brit. Med. Jour., March 12th, 1904.
[4] THE LANCET, August 20th (p. 522), and Oct. 1st (p. 942), 1904.

Unlike hæmorrhage, perforation demands the permanent suspension of bathing, and there can be no doubt that Dr. Caiger is right in stating that laparotomy, and laparotomy at the earliest possible moment, is in almost all cases the only correct procedure. Writing in 1897 I said:[3] "There can ..... be little doubt that the treatment of perforation, in hospitals at any rate, will in future be mainly by laparotomy; and that those hospitals in which the routine treatment is by systematic cold bathing will provide by far the largest supply of *suitable* cases for this operation." The reason for this is clear. "Systematic bathing ..... has so altered the symptoms of this accident and rendered so certain the possibility of its immediate diagnosis that the whole question of treatment requires reconsideration. Under expectant treatment the diagnosis is not infrequently impossible at the time. At the Brisbane Hospital up to the end of 1886 it was not uncommon to find perforative peritonitis for the first time in the post-mortem room. ..... In contrast to this is the experience of the Brisbane Hospital during the first three years of the bath treatment. During this time 34 cases suffered perforation, but so clear was the mental condition in all these patients that in every instance they were able to fix almost exactly the time of the accident. Not only so, but they were able as a rule to give so significant an account of the onset, site, and character of the pain, that usually a positive diagnosis could be made even before the signs of peritonitis were apparent."

The history of many cases was a sudden pain in some definite part of the abdomen; later an access of vomiting with a concurrent exaggeration of the pain, indicating extravasation of bowel contents. And it was found that very often the administration of a hypodermic injection of morphia (one-third to one-half grain) immediately after the commencement of the pain was capable of deferring the onset of vomiting for some hours. That is the opportunity for laparotomy in my opinion.

I am, Sirs, yours faithfully,

FRANCIS EVERARD HARE, M.D.

THE TREATMENT OF STRABISMUS.

To the Editors of THE LANCET.

SIRS,—As the brief account of my operation for strabismus, which appeared in THE LANCET of Jan. 7th, p. 61, is not sufficiently clear to prevent the possibility of misinterpretation, I should like to supplement it by a few remarks of my own.

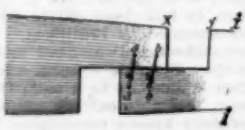
My principal object is to replace as much as possible tenotomy by the "advancement" of the muscles in the operation for all imperfections of the motility of the eyes (paralytic as well as concomitant squint, insufficiency, &c.). During last year I performed 100 "advancements," always with very good results, but in the same period I performed only two tenotomies.

There are some rare cases of convergent strabismus of very old standing, with strong contracture (not contraction) and marked alteration of the structure of the internus muscle.

FIG. 1.

Lines of incision in muscle. *a*, *b*, Points of suture. *t*, Insertion of muscle.

FIG. 2.



Muscle advanced and sutured. *x*, *y*, Gap in muscle. The remaining letters signify the same as in Fig. 1.

A surgical operation on this muscle seems to be admissible, simultaneously with "advancement" of the opposing muscle. Only, instead of setting back the shortened internus by a tenotomy, I propose to preserve its normal insertion on the eyeball and to lengthen it by a special procedure. The new operation consists in severing the muscle so that the divided extremities are left somewhat in the form of steps of a stair, as shown in Fig. 1, and lengthening it by uniting these extremities, as shown in Fig. 2. The operation has already given me excellent results.

I am, Sirs, yours faithfully,

Paris, Jan. 17th, 1905. DR. LANDOLT.

[3] The Cold-bath Treatment of Typhoid Fever, F. E. Hare, 1898, pp. 136 *et seq.*

THE PRINCIPLES OF TREATMENT OF PNEUMONIA.

To the Editors of THE LANCET.

SIRS,—In a rather remarkable address on the Principles of Treatment of Pneumonia, published in THE LANCET of Jan. 21st, p. 138, Dr. W. Ewart lucidly presents his views and his practice as derived from numerous and careful clinical observations and also from certain conceptions as to the pathological processes in the lungs and elsewhere. It is, of course, on this broad basis that all successful treatment must be reared and tested. Regarding the directing of treatment in conformity with what one conceives to be the pathology of the disease, this, though a most laudable ambition, is sometimes hazardous, and should no ill-results follow, the treatment may be right; but, on the other hand, the patient may recover in spite of the treatment. As to the indications for treatment which are supplied by the pathology of pneumonia I venture to notice briefly two of these, both of high importance, though differing widely in range. One of them is considerably exploited by Dr. Ewart; the other is not alluded to directly in his address but is suggested by his acute observations. That discussed by Dr. Ewart refers to the influence and import of the fibrinous coagulation in the lungs. He begins by quoting the opinion of a New York physician to the effect that "the extensive effusion of fibrin is really a 'breeding ground' for the diplococci and this enormous supply of pabulum is the explanation for the overwhelming amount of poison manufactured by them in the lung and thrown into the circulation." Then, in discussing the principles of action, Dr. Ewart advocates "defibrination," observing that "to discourage the local consolidation by diminishing the supply of fibrin factors is the end towards which our treatment and diet are made to converge." Further on it is explained that the consolidation is checked by administering citric acid, a precipitant of calcium which is essential to clotting. Other measures to this end are also advocated, including the possibility of impairing the solidification of the fibrin by withholding salt from the diet in view of the fact that the fibrinous exudation is rich in sodium chloride.

In studying the pathology of this disease for several years nothing more strongly impressed itself on my mind than the view that the pneumonic consolidation is nature's method of localising the morbid process and of curing the disease. The statement quoted by Dr. Ewart as to the fibrinous exudate forming a breeding ground for the pneumococcus belongs to the realm of fancy and is neither scientifically correct nor borne out by actual observation. In the first place, the fibrinous exudate is *dead*, in a state of coagulation necrosis, and so does not offer a suitable pabulum for the micro-organism. The organisms, imprisoned in this rigid dead substance, behave as they do in certain artificial media—viz., secrete an acid which quickly inhibits their vitality and their virulence. Some have supposed that this acid in the pneumonic lung is secreted by the pulmonary tissues and have termed it pneumic acid, but when engaged a few years ago in a research on this subject I extracted from pneumonic lungs an acid giving identical reactions to that obtained in artificial cultures. In examining microscopically sections of pneumonic lung in various stages of hepatisation I have been struck with the absence of active growth of pneumococci within the alveoli. Moreover, in cases of pneumococcus infection showing little or no tendency to pulmonary hepatisation; when the pneumococci run riot in the organism so to speak, the result is always grave and, indeed, generally fatal. Consolidation is doubtless the natural and wholesome reaction of the tissues to the disease, and though any attempt to modify the virulence of the organism and in this way limit the extent of the consolidation is not only justifiable but the object most to be desired, yet any interference directly, as by drugs, with the normal deposition of fibrin is, according to the view here propounded, simply to direct one's weapons against the *vis medicatrix naturæ*.

The other topic suggested by Dr. Ewart's address refers to the definitely scientific treatment of this affection in accordance with certain recent discoveries. Alluding to the objects

of treatment, such as the arrest of the morbid process, the restriction of the invading host, and the neutralisation of the poison, Dr. Ewart remarks that the individual means to these ends may be inadequate at first or even mistaken. Inadequate doubtless, but perhaps not so much mistaken, provided our means are checked by the very definite method of blood examination which has been elaborated by Leishman and by Wright and Douglas. The amount of protective substances in the blood: those natural antitoxins which the latter observers have rather happily termed "opsonins," can be accurately estimated in any individual case of infectious disease and affords a true index of the patient's condition. The process is rendered both easy and speedy by the now celebrated method of Leishman, as modified by Wright. That the blood serum (not the corpuscular elements) contains a substance (an opsonin) which effects a chemical interaction with the bacteria so as to prepare the latter for phagocytosis seems to have been definitely determined quite recently by Wright and Douglas. In the case of two specimens of blood of conspicuously different phagocytic power the corpuscular elements were separated from the fluids and an interchange effected. "The leucocytes of the successfully immunised patient exhibited in these circumstances the lesser phagocytic action characteristic of the blood of the normal individual who served as a control, while the leucocytes of the normal individual exhibited the increased phagocytic action characteristic of the blood of the successfully immunised patient."[1] By counting the number of organisms (from an artificial culture) which the washed cells of normal blood when mixed with the patient's serum can ingest under certain conditions an accurate estimation can be made of the opsonic content of the blood. This phagocytic count is compared with the phagocytic count of normal blood, taken as unity,[2] and so from hour to hour or from day to day the rise or fall in the protective substances in the patient's blood can be accurately determined. Although at first sight it might be supposed that the results thus obtained would be capricious, yet repeated observations made in cases of acute and chronic infections show the method to be remarkably accurate. As already observed, this protective substance or opsonin is normally present in the blood, but when a vaccine is introduced into the patient's system its effect is to cause a greatly increased elaboration of opsonins by certain cells of the body. In the case of pneumonia we have no vaccine as yet which can be administered. But one can see that an attempt at a really scientific treatment of the disease would be made if the various methods of treatment adopted were considered in conjunction with the rise or fall of the opsonic curve. If, for instance, it was found that alkaline treatment was accompanied by a rise in the opsonic curve this would indicate that benefit was being derived, and *vice versâ*. In short, it might be possible by an organised series of observations to determine treatment generally applicable to the disease and also that adapted to its varieties and special phases. And it may be remarked that the clinical symptoms alone are not always a safe guide. The opsonic curve may be falling with but little change in the symptoms, for a time at least. In certain inoculations I made lately on animals I found in certain cases the opsonic value of the blood falling without any loss of body weight or other clinical symptoms to indicate it. At any rate we have here opened up the possibility of treatment based on scientific data of a very precise character. It does not include the entire treatment of the disease, more especially as to the mechanical aspects, but it covers a very wide field and may in time displace the theorising and groping which up to the present have more or less characterised the efforts of the physician.

I am, Sirs, yours faithfully,

Henrietta-street, W., Jan. 21st, 1905. A. G. AULD.

ANKYLOSTOMUM DUODENALE.

To the Editors of THE LANCET.

SIRS,—Upon my return to Egypt I find that in a communication by Dr. Alessandrini to the Italian Zoological Society, written at the end of 1904, I am given the credit of having made independent research upon the question of the migration of the larvæ of the ankylostomum duodenale from the skin to the intestine. I also hear that other authors such as Bentley and Zinn, seem to have accorded me similar credit. I therefore ask for a few lines of your valuable space to state that my two communications on this subject were written by Professor Looss's authorisation as a means of informing English readers of his now well-known discoveries.

I am, Sirs, yours faithfully,

Cairo, Jan. 12th, 1905. F. M. SANDWITH.

[1] Proceedings of the Royal Society, Sept. 28th, 1904.

[2] In each case one volume of serum is added to one volume of corpuscles from citrated normal blood and one volume of a suspension of the organisms.

FRACTURE OF THE ANTERIOR FOSSA OF THE SKULL DIVIDING THE OPTIC NERVE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 21st Dr. F. J. Hathaway records a case of the above and it is commented upon in your annotations. Will you permit me to say that I discussed the same question in a paper before the Ophthalmological Society a few years since? I then recorded 18 cases and treated the subject somewhat fully in a paper which occupies 25 pages of the Transactions of the society for 1897. It is briefly abstracted in THE LANCET of June 26th, 1897, p. 1745. Since that time I have seen fully a dozen additional instances. Three cases a short while ago were attending my clinic at the same time and were shown at a meeting of the Sheffield Medico-Chirurgical Society. One case is at present among my out-patients at the Sheffield Royal Infirmary. I am not therefore disposed to consider the association of damage of the optic nerve with head injuries as particularly rare and, if looked for, such cases in a large clinic will not infrequently, I believe, be met with.

The medico-legal aspect of these cases is interesting and important. An individual meets with an injury to the head; there may be some loss of consciousness or not and the general symptoms pointing to severe head injury may or may not be marked but he asserts that he has thereby completely lost the sight of one eye. Examination with the ophthalmoscope only yields negative results. The lesson to learn from these cases is, I think, that one should be guarded in forming an opinion and should recognise the possibility of the patient's statement being correct. This will be corroborated, if true, after a lapse of a few weeks (three or more) by the decolouration which will be noticeable in the optic papilla. I referred to this matter in the paper I have mentioned and it has also been my habit to point out to my class for some years its importance. The absence of ophthalmoscopic evidence at the outset is doubtless due to the injury being posterior to the point of entrance of the central retinal artery into the optic nerve.

I am, Sirs, yours faithfully,

Sheffield, Jan. 23rd, 1905. SIMEON SNELL.

HESSING'S SPLINT AND CONTRACTURE AT THE KNEE.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you would grant me space wherein to correct two omissions in my recent communication. First, the instrument I made use of was Hessing's splint-case appliance as modified by Hoefftcke. One of the modifications is a very important one and consists in an arrangement at the ankle whereby continuous traction of the leg is applied during the straightening of the knee. It is this traction which prevents the straightening process from causing pain. Secondly, I omitted to mention that the mobility of the knee, which at the commencement of treatment was almost imperceptible, has very slowly but steadily increased, being now some 15 degrees; in other words a flexed, rigidly ankylosed knee has been transformed into one with fair and apparently increasing mobility.

I am, Sirs, yours faithfully,

Wimpole-street, W., Jan. 24th, 1905. T. H. OPENSHAW.

WEST AFRICA AS A HEALTH RESORT.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if you would be good enough to contradict a report attributed to me that West Africa is likely to become a health resort. The health of Europeans in many of the coast towns now shows a marked improvement and will no doubt continue to improve. This

is attributed to increased sanitation, including anti-mosquito measures, new residences in selected quarters, and more careful selection of those who go out and who, in consequence, realise how to live in a tropical climate and to avoid infection from malaria and other diseases, but it was very contrary to my wishes to imply that the improvement in health in West Africa is likely to be so rapid as is suggested by the remarks wrongly attributed to me.

I am, Sirs, yours faithfully,

Liverpool, Jan. 24th, 1905. RUBERT BOYCE.

THE CAUSATION OF SEX.

To the Editors of THE LANCET.

SIRS,—In my letter of Jan. 7th I find I have inadvertently made a mistake in one of the dates given. Under "Child II." the letter reads, "last menstrual period ended Oct. 3rd, 1900." Obviously it should be, and was, Sept. 3rd, impregnation taking place between Sept. 24th and Oct. 2nd, that is, premenstrually to the next expected period, which, of course, did not appear, conception having occurred. I must apologise for the error and trust you will grant me space to correct it.

I am, Sirs, yours faithfully,

Jan. 22nd, 1905. MEDICUS.

MEDICAL NOTES FROM THE FAR EAST.

(FROM A SPECIAL CORRESPONDENT.)

(Continued from THE LANCET *of Oct. 8th, 1904, p. 1048.)*

WITH a permit from the Minister of War, twice extended, I presented myself at the chief division of the military hospital in Hiroshima on August 9th, 1904, and was escorted round the hospital by Dr. Tanaka, second officer in charge, who talked freely in German for three hours, on the condition only of our avoiding topics relating to strength and disposition of forces. Surgeon-General Professor Sato, principal medical officer of Hiroshima and professor in the Military School of Medicine at Tokio, was out at the time of my visit. Dr. Tanaka, however, who was called up for service after having formerly served for ten years in the army, has himself done all the operating and was the more able to give the required information through having been attaché to the British forces in South Africa in 1900, when he was unable to proceed further than Kronstad.

Hiroshima is the central base for all military cases of sickness or wounds from the front, as Sasebo is for all naval cases, as Moscow is for all severe Russian cases which are not too serious to be sent to Europe, and as Netley is for our army and Haslar for our navy on foreign stations in normal times. Since the journey hither from Dalny or Antung at the mouth of the river Yalu takes three days the most serious cases do not leave Manchuria and all have passed through the first and most interesting stage before they reach Japan. From Hiroshima all but the most severe cases are distributed to the large hospitals at Tokio or the smaller hospitals at Osaka, at Sendai, and in the north of the island of Kyushu. There is accommodation in Hiroshima for nearly 4000 patients, half that number being the total under treatment at the time of my visit. This hospital is organised in six divisions—six virtually independent hospitals, of which two were in existence and use before the war broke out, while the other four have been built and all six re-staffed for their present use. The method of building is the same as elsewhere, the material being grey unstained wood plastered on the inside and resting on brick foundations, the pavilions, of one floor only, being ranged parallel to each other down either side of a central covered alley way. Each pavilion consists of half a dozen separate rooms of good size for special cases, pack-store, dressing room, nurses' room, and kitchen, between which is the entrance to the main ward; the lavatory, bath, and latrine are in an annexe. In the pavilion in which special inquiry was made there were seven patients in three private rooms and 72 patients in the main ward, the nursing staff consisting of eight female nurses and one sister.

This ward was considerably overcrowded, as were several other wards, the division for the more serious surgical cases, over which Dr. Tanaka took me most thoroughly, having 300 patients but only 250 beds. The extra 50 patients, all well on the way to recovery, were accommodated in two ways, either by lying on bedding placed on the floor of one-half of the ward, the beds being cleared into the other half, or by three of them sharing two beds put side by side. To the first expedient there is no objection for convalescent surgical cases on the score of comfort, for the men are accustomed to sleep on the floor without even the intervention of a mattress. The only drawback is that as the windows are sash windows not opening lower than to within two feet of the ground, there is no cross ventilation except from the doors and the occasional inlets about six inches square at the floor level, and for comfort's sake ventilation with the temperature at 85° F. in the shade is highly desirable. The alternative of three convalescent surgical cases sharing two beds is not objectionable, at least for Japanese, on any grounds. The bedsteads are the simple old-fashioned iron ones with plaited iron laths, such as are hardly seen in England now even in servants' bedrooms. Put side by side they give ample room for three men who, wanting nothing more than a sheet to cover them even at night, have each their own upper sheets and are content. The windows of these older buildings are sash windows of glass but in all the recent temporary buildings the window openings are occupied by sliding screens of paper mounted on light wooden frames or by shutters of thin imbricated wood hinged above so as to open outwards and to give shade from the sun during the daytime. At night, however hot it may be, the Japanese are accustomed to close all doors and windows and to sleep almost stripped; indeed, the police insist on the houses being completely closed as a protection against thieves, and in the new Japanese hotel at Sasebo the difficulty of ventilation was supposed to be overcome by a foot of open lattice work above the sliding panels all round the room under the eaves of the roof. It was with difficulty that the hotel authorities were induced to leave the panels open all night and fortunately neither thieves nor police appeared to have noticed the omission. In the hospitals it seems that the wards are often entirely closed at night. In winter it is probable that they will to a great extent be closed all day as well, for the medical men are not free from the fallacious belief that the paper screens allow the transmission of sufficient air and the supply of artificial heat is likely to be inadequate. The spirit of hygiene has a very unequal foothold. The Japanese authorities are most careful to isolate dysentery, yet on a recent voyage of one of the hospital ships patients suffering from typhoid fever and dysentery were mixed together and there was no isolation of the cases of kakké (beri-beri), although there is at least as good reason for the isolation of that disease as of dysentery. Their arrangements in the field for the drinking of boiled water only are admirable but here in their permanent station hospitals, in their university hospital at Tokio, and in their new Red Cross hospitals the latrine system is extremely defective, ill managed, and often close to the water-supply. In the hospitals in Hiroshima there is no cover to the opening in the footboard which takes the place of a seat, so that the dust and flies from the fæces have free access to the wards. The receptacles are open pans fixed in the earth a foot or more below the board, and when they are to be emptied they are reached only with difficulty by a small opening on the outside at the ground level, through which opening the contents have to be ladled and scraped away with much soiling of all the surroundings. Perhaps it will some day be recognised that it would be better to provide the latrines with covers inside the building, to substitute half a kerosene tin for the fixed open pan, and to change it for a clean one every day. The medical staff for this division of 250 beds consists of six surgeons; the nursing staff consists of 66 Red Cross nurses, not counting, I imagine, the half dozen American nurses who came to Japan under Miss McGee, M.D., and who were still at work there at the time of my visit. The admiration of these American ladies for the nursing qualities and instincts of their Japanese colleagues was pronounced. At the mouth of the river Yalu hospital ships are compelled to anchor out of sight of land, the patients being brought out to them on sampans—the heavy punts of the East—worked by a stern oar. On reaching Japan the sick and wounded are again transferred into sampans at Ujina, the port of Hiroshima, and are taken up the two or three intervening miles by water. The vessel that had just brought back patients from the Yalu had a roll of 300 sick, a large proportion of whom were suffering from kakké (beri-beri). This disease appeared to be very prevalent and there were

said to be 800 cases of it in Hiroshima. Dysentery was not at that time serious either in extent or degree.

Turning now to the clinical experiences in military surgery the first noticeable point was the collection of bullets and skiagrams. During the war in South Africa it was customary to give the patient the bullet or fragment of shell or bone extracted from his body under operation. In the Japanese hospitals, however, all such specimens belong to the Government and are systematically preserved in glass bottles or in a special glass-covered and locked box divided into 100 compartments, each specimen being put into a separate compartment, with a label briefly summarising the case from which it was taken. There is thus already, both in Sasebo and in Hiroshima, a museum of distorted bullets and of military pathology superior to any collection made during the South African War. A regulation to secure this result in all future wars should surely be added to the rules of our services, both British and Indian. The new museum buildings at Millbank in London would thereby be improved in one respect in which they must be lamentably deficient. The Lee-Enfield bullet measures 0·303 inch, or 7·57 millimetres, in diameter, the Russian 7·7 millimetres, and the Japanese only 6·5 millimetres. In length and shape they are all much alike, with a very similar nickel mantle. The usual distortions were seen—namely, the marks of the rifling, side-to-side flattening especially at the forward end, flattening with deviation almost to a right angle of the front half or third, and ripping off of part of the nickel mantles. None of the bullets, however, bore any sign of malicious manipulation; there were no split, hollow nosed, or filed bullets, and no mushrooming had taken place in any of the fragments preserved. One bullet measured 12 millimetres (half an inch) across but it was duly cased. The one or two Japanese bullets present had been extracted from Japanese soldiers, thus illustrating one of the practical difficulties of modern strategy. Pom-poms appear to play no part in this war although there was a single instance of a one-pound shell in the collection at Sasebo. Altogether Dr. Tanaka has in three months performed 238 operations, following the German principle by which the chief surgeon alone operates and junior men are only allowed to act as dressers and clerks. As with the bullets so with the skiagrams. Every skiagram as soon as it is printed is properly mounted on a card of uniform size with the chief particulars entered on the back and these cards are classified and kept in order in a special drawer on the principle of a card index. The skiagrams themselves, however, were not so good as those at Sasebo. There was no localising apparatus and the need of it was not felt. Skiagraphy is well known to have its limitations and Dr. Tanaka, like so many others, has searched in vain for bullets localised just before operation by the cryptoscope or by skiagrams in different planes. He was well aware how obvious and yet how elusive a splinter among the metacarpal bones might be or a bullet in the soft parts of the thigh or a shrapnel ball in the buttock. What memorable and unwelcome episodes the bare mention of the fact must recall to those who worked in South African hospitals and to many who have practised in recent years in any large surgical centre.

The result of these failures is that at Hiroshima the surgeons have arrived at the rule for cases of buried bullet, "If in doubt do not operate." In looking over the skiagrams the answer to my question as to operative treatment was very often, "None; he got well without symptoms." "Weak surgery" will be the verdict of the enthusiast but it is possible that here discretion is sometimes the better part of valour. It would be interesting to have a complete inquiry two or three years hence into the condition of wounds with retained bullets. Considering the aseptic nature of simple bullet wounds there is a good deal to be said in favour of the policy of letting sleeping dogs lie. With shrapnel there is more danger, for shrapnel wounds are more prone to suppurate, and it is noted at Hiroshima that on the average men wounded with shrapnel stay longer in hospital than those having gunshot wounds. But here also it seems reasonable, if the surgeon and the patient prefer it, to defer operation until symptoms appear. Prompt operation will, however, be indicated by the foreign body lying in such a region or position as to make danger or discomfort probable in the future. There was then in the hospital a case of this kind, in which a shrapnel ball had entered below the right eye and penetrated through the malar bone into the temporo-sphenoidal fossa where it was visible in a skiagram. An operation was performed similar to Rose's method for reaching the Gasserian ganglion by turning down the masseter and the zygoma and turning up the coronoid process of the jaw and the temporal muscle, when the bullet was found lying absolutely in contact with the uninjured internal maxillary artery. Recovery is now complete. There were two inoperable cases of bullets embedded in the brain in which the symptoms were slowly improving. Another man had been struck by a bullet which entered his left eye and passed out through the right temporal bone just below the mastoid process. A fragment of bone came away through the naso-pharynx and back of the mouth. Apart from the loss of his left eye he seems to suffer only from some deafness in his right ear; he stood at "attention" and showed us the site of his wounds as if they had been through his leg or his boots. There were three most interesting series of cases of which brief notes were made, the respective lesions being gunshot wounds of the spinal cord, aneurysms of various kinds, and gunshot neuralgia. Each series would have repaid a lengthened study had circumstances permitted.

[Considerations of space necessitate the omission of our correspondent's remarks on wounds of the spinal cord. He also described one case of "the somewhat rare condition in military surgery of subphrenic abscess" and a case of nerve suture, the only operation of that kind which had as yet been performed; the musculo-spiral was the nerve sutured and the effect was complete relief of recent terminal radial neuralgia. After the paragraphs on wounds of the spinal cord he continues as follows:—]

The series of aneurysms was interesting from the point of view both of diagnosis and prognosis. The commonest wound of considerable blood-vessels consists in the minute rupture of a large vessel or the larger rupture of a small vessel in a limb where extravasation of blood is limited by fascia and muscular planes, the result being the formation of a false or spurious aneurysm. It is not necessary that the bullet should itself rupture all three coats. It is enough that it should rupture the outer coat and most of the thickness of the middle one, allowing the inner coat to bulge through the wound. The intra-arterial pressure will then gradually enlarge the true aneurysm thus produced, especially if the wound appears to be simple and the patient walks from the site of injury to the hospital or ambulance or is allowed to walk about the hospital after admission. This shows the imperative necessity, not always recognised by those unaccustomed to military surgery, of absolute rest for all patients with flesh wounds, however simple, during the first few days. A slight wound of the arterial coats may otherwise lead to aneurysm; the inner coat, becoming spread out over an ever-increasing accumulation of blood, may give way, and even if the swelling be circumscribed and the limb kept at rest there will be serious danger of gangrene from defective arterial flow and from venous obstruction by the pressure of the extravasated blood. Nor is the danger passed after operation when the clot has been incised and turned out without much loss of blood and either end of the vessel successfully secured and ligatured. In Hiroshima there have been several cases of gangrene after operation, mostly attributed by the operator to the exclusion of too great a length of artery—usually the femoral from the groin downwards—and the cutting off of too many branches from the collateral circulation. This gangrene has usually limited itself to the tips of one or two toes; there were, however, one or two cases which were less fortunate. In all down to the end of July, 1904—that is, for a period of less than six months since the beginning of the war—there have been 21 cases of spurious aneurysm. The arteries affected have been as follows: in the neck, the vertebral artery, the second part of the subclavian, and the third part of the subclavian; in the upper limb the axillary artery, the brachial, the radial, and the anterior interosseous; in the buttock the superior gluteal artery; in the lower limb the popliteal artery, the anterior tibial, and the posterior tibial. Two of the above cases of spurious aneurysm proved of special interest in operation. In one a bullet wound had been received on June 25th, 1904. When the patient was admitted at Hiroshima on July 23rd a large swelling was found under the outer half of the clavicle, bulging the pectoral muscles slightly forwards and transmitting arterial pulsation. On July 25th the usual operation for ligature of the third part of the subclavian was performed in order to control hæmorrhage and the artery so far as could be seen from the wound above the clavicle appeared undamaged. The swelling was then directly incised below

the clavicle, when the blood gushed out to an alarming extent despite the ligatured subclavian. The wound was instantly plugged with gauze and after much trouble, the pectoralis minor being reflected, the axillary artery was secured immediately above and below the site of injury. The aneurysm was spurious and a fortnight later recovery was already complete so far as could be judged. In the other case a bullet had passed in through the right eye and out just below and behind the angle of the right lower jaw. No symptoms were caused except, of course, those due to the pulped eye. Facial, temporal, and occipital pulses could be felt; cerebration was normal; and the superficial blood return of the neck was unimpaired, but there was a large tense swelling in the site of the wound of exit behind the angle of the jaw. The tumour was incised and profuse pulsating hæmorrhage took place from the depths of the wound, apparently arising from one of the important arteries of the neck. The wound was promptly tamponned with gauze and after infinite trouble the source of the hæmorrhage was traced right down to the transverse process of the second cervical vertebra, through which the blood was found welling up, obviously from a ruptured vertebral artery. At this depth it was impossible to reach the artery to tie it, even if the end could be found, and the patient had lost so much blood that further operation was inadvisable. The wound was therefore again tamponned and death unfortunately occurred next day, probably from cerebral clot.

There have also been several cases of arterio-venous aneurysm but the Japanese surgeons have not yet had an opportunity of seeing the results of operation or non-operation under these conditions. At present, if there is a considerable swelling or definite symptoms—not including the mere buzzing sound—Dr. Tanaka ties the artery above and below, as a rule, leaving the vein untouched. Both Mr. G. H. Makins and Mr. A. A. Bowlby, however, in their books refer to the frequency with which apparently harmless arterio-venous aneurysms cause weakness and incapacity of a limb as soon as the patient returns to military duty or civil employment, and also to the fact that the difficulties of operation are increased by delay.

The third interesting series was one of gunshot neuralgias, 24 cases of which had been operated on by Dr. Tanaka. Neuralgia of the median nerve has been especially common and in nearly every case of this series definite cause for the neuralgia had been discovered and to some extent removed. Pressure by scar tissue, involvement in callus, subacute inflammation of surrounding parts leading to perineuritis and neuritis are the common causes, the most usual being inclusion in scar tissue. Operative treatment consists of neurolysis—another word for removal of the cause—and stretching so as to break down intranerval adhesions. The result is not immediately satisfactory to either patient or surgeon but there is a slow improvement which continues until in most cases the neuralgia is completely gone.

Of interesting visceral lesions notes were made of one gunshot wound of the thorax and one of the abdomen. The first was a case of hæmopyothorax. The wound of entrance was situated an inch below, and outside, the right nipple; the wound of exit was in the seventh intercostal space close by the angle of the right scapula. The injury was received on June 21st, 1904, and speedily healed on the outside. Intrathoracic symptoms were slow in manifesting themselves and the physical signs, variable in character and indefinite in extent, seemed only to indicate a subacute bronchitis of the right lower lobe of the lung and a slight dry pleurisy at the base in the flank with low fluctuations of temperature to 100° F. (38·3° C.). After a time pyrexia became more marked, dulness was made out in the sixth space in the posterior axillary line, pus was found on puncture with a needle, and an operation was performed on August 4th. On incision a localised collection of blood clot was discovered, broken down at the centre into pus. An inch of rib was resected and the wound was drained with sterilised gauze. As seen after a few days the drain had already been dispensed with, the temperature had fallen to normal, and the intrathoracic signs had disappeared. In the second case a man had been shot through the liver and had recovered without operation and without manifesting any symptoms of injury. The wound of entry was in the right anterior axillary line immediately below the costal margin, at about the tip of the tenth rib. The exit was immediately internal to the inferior angle of the right scapula as the patient stood at "attention." Both liver and lung must have been traversed, and apparently not only must the gall-bladder and the large vessels of both organs have escaped but the bullet must also have passed out through the seventh intercostal space behind, avoiding the ribs both above and below, for at no time had there been any local tenderness or any sensory disturbance. Notwithstanding the aseptic methods in use at these hospitals, the occasional occurrence of suppuration in fresh operation wounds was acknowledged. There were several cases of fractured tibia and fibula or femur all fixed in well-made plaster splints, those for the femur being continued as a spica round the waist and strengthened by a lateral iron. But I do not think there was a single case on extension; still less one on a Hodge's splint which appears to be unknown in Japan although it is, to many London surgeons at any rate, the ideal treatment for fractured femur.

From the foregoing it will be seen how thoroughly the Japanese practice conforms to the European, both in arrangement and management of the hospital, in nursing, in diagnosis, and in surgical and general treatment. They will, however, have to make very great reforms in certain parts of their sanitary administration. As a rule they have shown considerable ingenuity in adapting European methods to their own circumstances and their technical work compares favourably with that of any army or any hospital.

CHICAGO.

UNHEALTHY WORK IN THE STOCKYARDS.—SHAMELESS INDIFFERENCE TO THE INSANITARY CONDITION OF THE BUILDINGS AND THE CATTLE PENS.—POLLUTION OF THE SUBSOIL.—THE NEED FOR LEGISLATIVE INTERFERENCE.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p. 185.)

THE statistics that have been given and the details concerning the housing of the population engaged at the stockyards indicate that whatever ill-health prevails in this community in excess of what might be expected in the ordinary course of events is due in all probability to the nature of the occupation of the workers. The objection, however, may be raised that such a difference is but slight and therefore is not worth troubling about. Where human life is concerned, however, such an answer cannot, of course, be accepted. Besides, looking closely into all the circumstances it does appear as if some three or four lives, if not more, are lost every year in every thousand of the population of Packingtown and that these lives would be saved if, instead of the present disgusting slaughtering and packing factories, proper abattoirs were built and placed under efficient sanitary control. Of course, the estimate of from 3 to 4 lives per 1000 per annum is but a rough conjecture, based first on the fact that the statistics seem to show an excess of more than 2 per 1000 on the average for the whole city and that the very exceptional amount of vacant space and open air enjoyed in Packingtown should result in giving this district a death-rate below the average for the city as a whole. Especially should the death-rate be lower in this the eleventh sanitary district than it is in the fifth, sixth, and fifteenth sanitary districts. As this is not the case, it is only natural to attribute the comparatively higher death-rate of the eleventh sanitary district to the unwholesome conditions under which the work is done in the stockyards.

Speaking to local practitioners, they told me that the stockyard workers suffered more especially from tuberculosis and diseases of the respiratory organs and also from rheumatism and heart disease. The latter complaints were especially noticeable among those who had constantly to enter the cold storage rooms. In another department the workers are affected by the dust of the bones that are ground to make buttons. Then there is a department where a considerable number of women pack tongues in tins. Just behind them these tins are soldered and this operation produces a great heat. Finally, and also close at hand, jets of steam are discharged into other tins so as to sterilise them. And yet not very far off there are cold storage rooms. Here, then, dangerous variations of temperature constantly prevail. A partition would protect some of the women workers from the

steam, but no one seems to care and even so simple and inexpensive a device has not been adopted. In some compartments it will be noted that the women often put their aprons over their heads. On inquiry it was ascertained that they do this not to keep their heads clean but to keep off the damp. Again there is a blue paint employed to colour the tins. Fine particles of this paint are blown about and have a distinctly irritating effect on the air passages which predisposes them to more serious disease. While many work in overheated and damp atmospheres, others are engaged in the chilly and cold storage rooms. Such temperatures lower the resisting power of the mucous membrane in the air passages and increase the susceptibility to disease.

In regard to tuberculosis, it was pointed out that there were so much blood, water, steam, and damp about that even if some of the workers suffered from pulmonary tuberculosis and did expectorate on the floor this could not dry and therefore could not be breathed by others because there is no dust in the atmosphere. The atmosphere might have all kinds of unpleasant qualities but it did not contain any dust. On the other hand, with the aid of steam, grease, and dirt which abound in these buildings the bacilli of tuberculosis are believed to be capable of multiplying rapidly and they may live for a very long time. As for being taken up so as to come in contact with living human beings this is done by the boots of the persons going to and fro, by the pieces of meat which fall on the floor, by the carcasses, notably of the big cattle, which are deliberately laid on the floor, by the wheels of the trucks which roll over the floor, and by cases, tins, and boxes of all descriptions pushed and dragged about. Then there are the rafters, the dark nooks, and the corners where all the conditions necessary to form good culture grounds abound. Thus it is that tuberculosis is especially prevalent among the workers at the stockyards; and this is not only an important fact in itself but it gives rise to the increased possibility of the occasional introduction of the bacilli in the provisions which are sent from Chicago all over the world. The condition of this great industry affects not only the health of the inhabitants of Chicago. It is a local, but it is also a national, it is even an international, question. Here is one of the largest amalgamations, trusts, or unions of various firms representing various branches of associated industries that exist in the world. It has command of a great portion of the meat trade throughout the United States and threatens to become an absolute monopoly. From America to all parts of the world large quantities of these Chicago prepared and preserved meats are exported. If infection can be spread through meat then what a danger such an establishment might become to the world at large. As already explained, anything like a thorough disinfection of the premises is impossible and is never attempted. Nor can natural disinfection take place because daylight and the direct rays of the sun cannot reach the greater part of the interior of the buildings where the work is done, the meat is handled, and the tuberculous attendants expectorate. That the surroundings are foul, that in any case there is something wrong in the conditions of the work or of the workers, is shown by the fact that the smallest scratch or cut will result in blood poisoning if the wound is not at once treated with a strong antiseptic. Then there are the festering sores of the men who work in the ham-curing department and who are constantly plunging their hands and arms in the brine. It may also be noted that rendering vats are most dangerously placed. The lids are on the level of one floor and the vat or tank is on the floor below. If the lid is taken off there is no rail to prevent anyone falling in. It is asserted that several persons have thus met with an awful death. In these rendering vats the fat is converted into oil or oleo-margarine and the steam escapes into the rooms where people work, adding to the unwholesomeness of the premises.

Outside and all around there are a great number of cattle, sheep, and pig pens. The feeding troughs alone extend to a length of 25 miles. The water troughs are some 20 miles in length so as to accommodate 75,000 cattle, 300,000 hogs, 50,000 sheep, and 5000 horses. It would be thought that before allowing such an enormous congregation of living animals on one single spot the most elaborate precautions would have been enforced. Yet the view given in the last article (Fig. 7), taken from the window of the chief government inspector's office, shows that the cattle pens are made of wooden partitions which have not even been whitewashed. Nor is this some out-of-the-way and neglected corner. On the contrary, it is the most frequented part and close to the main entrance of the stockyards. Of course the first step to be taken in planning such a cattle market would be to provide throughout an absolutely water-tight flooring or paving. Further, this pavement should be convex so as to drain automatically to small surface gutters gravitating to numerous gullies emptying into very carefully built self-cleansing sewers. Considering the enormous amount of manure which must accumulate in such a market the necessity of water-tight pavement to prevent the contamination of the subsoil is self-evident. Nevertheless, and it will scarcely be credited, a large portion of the stabling and cattle pens is on bare earth. The liquid manure sinks straight into the subsoil; no attempt is made to prevent this wholesale contamination. Here and there, not to prevent contamination but to secure a better roadway, a firmer foothold, and to reduce the mud nuisance, a sort of rough wood pavement was put in. This is made of trunks of trees cut horizontally and these little round logs are placed side by side. This backwoodsman's expedient has now been replaced by the use of bricks but neither bricks nor blocks prevent the contamination of the subsoil.

It is over the bare earth also that the railway cattle vans laden with livestock arrive and discharge their freight. It does not seem to have dawned upon anyone that precautions are necessary. At Berlin the space between the railway lines is carefully arched over with a brick and cement pavement. Then along the lines there are water reservoirs built up at a considerable height to give sufficient pressure for cleansing purposes. When a train arrives after the cattle have descended on the pavement especially built for them the sand is swept or shovelled out of the vans. What cannot be thus removed is washed out with a fire-hose. After that an attendant arrives with brushes and pails containing a hot 5 per cent. solution of soda. With this the inside of the cattle, hog, or sheep van is carefully scrubbed. The State, as owner of the railways, pays two marks for the cleaning of each van. Considering how much cheaper money is in America the payment should be at least one dollar for sweeping and washing out each cattle van whenever it reaches the central market at Chicago. There is no reason why the American railway companies should not be as clean and as careful as the German State railway department. Considering that more food is exported from Chicago than from Berlin such precautions are more necessary at Chicago than at Berlin. Yet even by the main entrance of the stockyards there is no evidence of any such precautions. Here in front of the principal gate (as shown in Fig. 8 in the last article) are a large number of railway lines and with that carelessness for human life which is a disgrace to America the trains pass among the people walking in and out of the stockyards. At Berlin many lines also converge to the cattle market and municipal slaughter-house, but there are fine iron overhead bridges, so that pedestrians may cross in all directions without any risk of being hurt by the trains. At Chicago the cattle step out on the bare earth which they soil and contaminate. Cattle runs have been constructed not from sanitary motives but to provide inclined plains so that the animals may themselves walk up to the higher floors of the buildings where it is more convenient to kill them and to deal with their carcasses. How such rough wooden structures can be kept in a proper state of cleanliness is another matter which has received little or no attention. Pending their sale the animals have no suitable stabling provided for them.

At Anderlicht, near Brussels, the stables for cattle awaiting slaughter are built with the same care as hospital wards. Alike in the trough, floor, and ceiling no angles are allowed. All is rounded off. In no place can dirt accumulate. Along the whole length of the mangers there is a water pipe so that they can be instantly flushed out. The flooring, of course, is absolutely water-tight and the ceiling and the walls can likewise be flushed with water from the fire-hose. With louvre windows on each side through ventilation is secured and the direct rays of the sun can penetrate into the stables. Of course, the slaughter-house sheds are even more elaborately ventilated. Not only do large windows face each other on both sides but there are lantern ventilators on the roof and openings on the floor level. Where tripe is prepared the apex of the roof is opened along its whole length and cannot be closed. Now the

wholesale slaughter-house and cattle-market of Anderlicht form not a municipal or State establishment but a private enterprise, run for profit just as the stockyards of Chicago. The capital engaged is trifling as compared to that of the multi-millionaire monopolists of Chicago. Therefore, in the perfection of cleanliness and drainage, of scientific appliances, of bacteriological and well-appointed laboratories for microscope work, and of disinfecting apparatus the Chicago stockyards should excel far and away what is done in such places as Anderlicht. It may be considered only natural that the State or a municipality the first object of which is not profit but the health of the public and the welfare of its employés, should at least in some circumstances manage better than a private business undertaking. But at Anderlicht we have only private enterprise the main object of which, as at Chicago, is profit; yet Anderlicht presents to Chicago all the difference between civilisation and barbarism. This must be due, I cannot help repeating, to the absence of the sense of dignity which is one of the worst failings noticeable in America. So long as a thing pays it does not matter what ignoble expedient may be employed to make it pay. Some of the principal owners of the Chicago stockyards have confessed that they have more money than they know how to employ. Yet they allow a small enterprise like that of Anderlicht to put them to shame. Had they any sense of pride they would not be content to continue pocketing money made from filth but would feel intensely humiliated by the thought that not only had municipalities, both large and small, but even private enterprises succeeded in building and managing cattle markets and slaughter-houses where no filth accumulates but where there are light and air throughout, no subsoil contamination, and no promiscuity between the carcasses of diseased animals and meat intended for human food. Where at Chicago are the quarantine stables? where is the quarantine slaughter-house? where is the quarantine depôt for suspected or diseased carcasses? where is the quarantine destructor for the same? At Chicago all these dangerous services are mixed "higgledy piggledy" with healthy cattle and wholesome meat.

The mere fact that several European Parliaments have felt that the filthy ways prevalent at Chicago necessitated special legislation against importations from that town is such an affront that if there were any sense of dignity the whole nation would rise and insist upon the sweeping out of those truly Augean stables known as the Chicago stockyards. If this is not done there is ample vacant space in the immediate neighbourhood for the State or the Chicago municipality to build model slaughter-houses according to modern principles of sanitary science. Then a law could be enacted prohibiting private slaughter-houses. The fees that could be charged at the municipal slaughter-house would more than cover the outlay. The Federal Government would on its side have to intervene by a general law to prevent the removal of the Chicago business to some other place where the local regulations might be less strict. Here, again, the necessity of a general law is felt. The municipality of Chicago may plead as its excuse for allowing such abominations to grow up in its midst that had it been more careful and stringent the business would have gone elsewhere to the detriment of the revenues and prosperity of the city. But there is something that is more important than revenue and that is public health. Only public health needs uniform laws, otherwise evils will grow up where the law least interferes. So the Chicago stockyard grievance must be dealt with from the national as well as from the local standpoint. An immense economic problem is involved; but it is a health problem as well, because health primarily depends on food—wholesome, clean food. Fortunately, there are some highly educated and public-spirited American men and women who realise the importance of this great problem and are grappling with it from various points of view. The President of the United States is not indifferent. It is said, on the contrary, that Mr. Roosevelt has determined to take in hand the question of the beef trust. There can be no better handle for dealing with this than the need to protect public health and in Europe there are many precedents to show how this has been done and done not only to the benefit of the public and of public health but also to the profit of the trade itself. In a word, the intervention of the State and the municipalities has proved, at least in this matter of slaughter-houses, to the lasting and real advantage of all concerned.

CHOLERA AND PLAGUE IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

THE following has been the course of the cholera epidemic in Turkey and the adjoining countries since the date of my last letter, published in THE LANCET of Dec. 24th, 1904.

No case of the disease is believed to have occurred at Bagdad since Nov. 30th. At Basra a single case was observed on Dec. 1st and none has been reported since. At Amara there were two cases and three deaths between Dec. 2nd and 7th, and the epidemic is thought to be at an end there. At Suleimanieh 34 cases and 21 deaths occurred between Nov. 18th and Dec. 15th and between the same dates there were 40 cases and the same number of deaths at Mamouret-el-Hamidié. At Revendouz a more serious outbreak has occurred, 203 cases with 185 deaths being reported there between Nov. 30th and Dec. 10th, and 21 cases with 16 deaths between the 10th and the 13th. The disease has also appeared among the Abu-Abdullah division of the nomad tribe of Ascara, whose camps are at present in this vilayet between the *caza* of Souk and the *sandjak* of Muntefik, along the lower reaches of the Tigris; but no figures are forthcoming as to the intensity of this outbreak. At Rania 42 cases and 42 deaths were recorded before Dec. 14th and a week later it was reported that the disease was still present there and at Keui-Sanjak but was on the decline in both. At Deir-Zor there were 15 cases and 16 deaths between Nov. 30th and Dec. 12th. At Hay no case of cholera was recorded in December and towards the end of the month it was reported that the state of Kerbela and Nedjef—where severe measures of precaution are said to have been taken during the Bairam fêtes—was satisfactory as regards epidemic disease.

At the very end of December cholera appeared at Van in Turkish Armenia. Information is at present lacking to show whether the infection reached this district from Russian Transcaucasia in the north or from Mesopotamia in the south. On Dec. 30th and 31st 27 cases with 12 deaths were observed there; in the first seven days of January there were 79 cases with 46 deaths and between Jan. 8th and 13th 14 cases with 5 deaths.

Information as to the behaviour of cholera on Persian territory continues to be fragmentary. Writing on Nov. 3rd the Ottoman sanitary delegate at Tehran reported that cholera was raging with new intensity at Meshed-i-Sar on the Caspian Sea. It had also just appeared at Ardebil, where it was causing many deaths daily. The Tehran board of health, which has recently been showing sporadic activity, had proposed to establish observation posts on the principal roads from Tehran to the provinces of Azerbeijan and Mazanderan. It also proposed to stop all travellers at Astera, Enzeli, Mendjil, and Kazvin, and "to turn back the sick"; to prohibit all pilgrimage until the epidemic is over by refusing passports to intending pilgrims; to re-establish "with rigorous severity" medical inspections, and if necessary quarantine, on the Turco-Persian frontier; and to open at least two inspection posts one or two days' journey on the Persian side of that frontier where persons sick with cholera or suspected cholera would be put in hospital. It is not yet known whether these proposed measures have been really executed.

Another report from the same source, dated Nov. 9th, states that according to information given by the Customs authorities cholera was still raging at Meshed-i-Sar, where it was causing an enormous mortality so that "the whole region had become one huge cemetery." The physician to the Russian legation at Tehran had reported that around Resht and Enzeli the disease had caused "veritable hecatombs" and there was general panic. It was also prevalent at Kerman and Kazerun; it had broken out with renewed severity at Maragha; it was lessening at Ispahan; and was also diminishing at Tabriz—after causing there a mortality of between 12,000 and 18,000. The disease was still present at Sarakhs, Navrouzabad, Singar, and Devlet. At Saoutch-Boulak there was a panic with flight of the population. Only sporadic cases were occurring at Miandjié and Khosrovabad but there was a revival of the epidemic at Nehi-abad and in the plains of Khaf.

In a third report, dated Nov. 16th, it was stated that cholera was very intense at Mohamerat (? Mohamerah on

e Shatt-el-Arab); that the epidemic was over at Tabriz; t that the disease was still epidemic at Ardebil. In a urth report, dated Nov. 19th, it was stated that there was revival of the outbreak at Kazvin and in the Mazanderan ovince. Finally, in the fifth report, dated Nov. 23rd, the e authority asserts that a regiment of recruits march- g from Tabriz to Tehran had been attacked by cholera and d sown the infection broadcast along the course of their arch. They were then encamped outside Tehran, and no recautions being taken to prevent their communicating ith the town one case of cholera had already occurred in inhabitant of Tehran near the site of their camp. The stoms authorities reported that a grave form of cholera as prevalent at Mohamerah where most of the cases ended death. A new explosion of the disease had occurred at azvin and at Yengué-Imam owing to the passage through ese places of the above-named regiment of recruits. At abriz also there had been a recrudescence, and there were ill sporadic cases throughout the whole province of Ghilan. n the province of Ghoutchan (*sic*) cholera had appeared in e village of Ali-abad and was spreading southwards. The isease had revived at Kelate and Gharatikan; it was ausing 8 deaths daily at Kerganeroud, 20 deaths daily at stera, and was raging, with consequent flight of the opulation, at Chefa-Roud and Taleh. (I give the names of ese places as they are spelt in the report from which they re quoted. Most of them cannot be identified on the maps t my disposal.) Many deaths were still occurring at Saoutch-oulak; at Kerman 15 deaths were being daily recorded, and t Kashan the epidemic was at its height.

To the above notes may be added the statement that in ehran a considerable mortality has recently been observed rom diarrhœa, dysentery, and typhoid fever, all of which iseases have been traced to contaminated water-supplies; hat a grave form of typhoid fever was epidemic at Kerman, nd that "typhus" (though whether this means petechial or bdominal typhus is not clear) was prevalent at Maragha and t Meshed-i-Sar.

The following figures relating to the prevalence of cholera n Russian territory are given on the authority of the official nnouncements in the Russian journals. There has been an ncrease in the outbreak, followed by a decline, in the ilitary post of Serakhs in Transcaspia. Between Nov. 16th nd 21st there were 25 cases here with 13 deaths; etween the 23rd and 29th there were 27 cases and 20 deaths; between Nov. 31st and Dec. 6th, 4 cases; between Dec. 7th and 14th, 4 cases, and apparently none since. On Nov. 24th cholera appeared in Tashkent and its neigh- bourhood, where 18 cases were recorded on the 24th and 25th and 4 more cases in the four following days. Between Nov. 31st and Dec. 6th there were 16 cases here with 7 deaths; between the 7th and 14th, 11 cases in the town and 22 cases with 16 deaths in the district of Tashkent; and between the 15th and 21st 4 cases in the town and 28 cases in the district. Between Dec. 7th and 14th the disease appeared in Askhabad and caused 3 cases, followed by 5 other cases in the subsequent week. One case has also occurred at Krasnovodsk, imported from Tashkent. Cholera is still present in Baku, where it caused 27 cases and 8 deaths in the week ending Nov. 22nd, while in the same week there were 13 cases in the Baku district, 22 in the Lenkoran district, and 2 cases in that of Djevat—all in the Baku government. In the week ending Nov. 29th there were 53 cases in Baku and the Baku government, and in the following week 66 cases in the town itself and at Balakhani in its neighbourhood. In the Lenkoran district of this government there were no less than 376 cases with 331 deaths between Nov. 21st and Dec. 3rd, and 177 cases with 152 deaths between Dec. 7th and 14th. In the Djevat district there were 286 cases and 217 deaths from the beginning of the epidemic on Nov. 4th to Dec. 3rd, and 264 cases with 203 deaths between Dec. 7th and 14th. In the Kubin district there were 20 cases and 14 deaths between Nov. 21st and 29th. Finally, in six infected districts of the Baku government there were 168 cases between Dec. 15th and 21st and 10 cases in Baku itself in the same period.

In Tiflis 3 cases of cholera were observed on Nov. 19th; followed by 4 cases between the 23rd and 29th; 2 cases between Nov. 31st and Dec. 7th, and apparently none since. The following have been the figures received from the Elisavetpol government: 10 cases in the Zangezur district between Nov. 16th and 22nd; 32 cases between the 22nd and 28th; 68 cases between Nov. 31st and Dec. 7th (including 1 case in a prisoner in the Elisavetpol town prison, and the rest in the districts of Zangezur, Djebrail, and Elisavetpol); 129 cases between Dec. 7th and 14th, and 9 cases with 5 deaths between the 15th and 21st. The outbreak in the Erivan government has been a particularly severe one. Between Nov. 16th and 22nd there were 522 cases and 342 deaths here, followed by 915 cases between the 23rd and 29th; 1018 cases and 661 deaths between Nov. 31st and Dec. 6th; 1352 cases and 1107 deaths between the 7th and 14th (including 956 cases and 839 deaths in the Erivan district, 241 cases with 177 deaths in that of Nahitchevan, and 154 cases with 158 deaths in the town of Erivan); and 324 cases with 279 deaths between the 15th and 21st (including 31 cases in the town of Erivan).

The following figures are from the Volga governments. In the town of Astrakhan there were 3 cases with 1 death between Nov. 16th and 22nd, and in the government of that name 11 cases and 5 deaths in the same period. Then between Nov. 23rd and 29th there were 6 fresh cases in the government; between Nov. 31st and Dec. 6th 6 more cases; between the 7th and 14th 1 case only (in Astrakhan itself); and between the 15th and 21st 3 cases. In the Saratof government there were 36 cases between Nov. 16th and 22nd; 40 cases with 19 deaths between the 23rd and 29th; 22 cases (of which 21 were in Tsaritsyn and one in the Volsk district) between Nov. 31st and Dec. 6th; 10 cases between Dec. 7th and 14th (all in Tsaritsyn); and 11 cases (in the same town) between the 15th and 21st. In the Samara government there were 13 cases between Nov. 16th and 22nd; 165 cases (of which 162 occurred in the Nikolaief district) between the 22nd and 29th; 32 cases between Nov. 31st and Dec. 6th; 17 cases between the 7th and 14th; and 70 between the 15th and 21st.

An outbreak of plague of some severity has recently occurred at Aden. Between Oct. 26th and Dec. 27th there were 203 cases with 144 deaths there. Of these, 182 cases and 131 deaths occurred in the crater which is five miles distant from the port; 18 cases and 10 deaths at Sheikh Othman, ten miles distant from Aden; 2 cases and 2 deaths at Malla, three miles from Steamer Point; and only 1 suspicious case at Steamer Point itself.

A remarkable outbreak of pneumonic plague is also reported from the Ural districts of Southern Russia and is said to have caused 190 deaths. Fuller details of this epidemic will probably be received later.

Constantinople, Jan. 17th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Specialism in the Indian Medical Service.

WITH the view of encouraging officers of the Indian Medical Service to qualify in chemistry the Government of India notifies that in selecting a probationer for the Chemical Examiner's Department preference shall *cæteris paribus* be given to an officer who has passed the intermediate or final examination of the Institute of Chemistry of Great Britain and Ireland or any equivalent examination, and that for appointment as chemical examiner preference shall *cæteris paribus* be given to a probationer who is in possession of the diploma of Fellow or Associate of the Institute of Chemistry or any equivalent degree or diploma. Other forms of specialism are to be encouraged particularly for sanitary appointments and for asylum work.

The Rapid Increase in the Mortality from Plague.

The rise in the mortality from plague throughout India continues and in some districts is assuming alarming proportions. There were 19,465 deaths for the week ending Dec. 24th, 1904, as compared with 18,284 for the previous seven days. The principal increases are in the United Provinces and the Punjab. In the former provinces the increase of late has been very rapid and 6822 deaths were recorded. No less than 41 out of 48 districts are affected and nearly all the chief towns. Cawnpore returns 295 deaths, Bareilly 186, and Allahabad, Aligarh, Lucknow, and Mirzapur return over 100 deaths each. The outlook for those cities which have been previously attacked is very serious. In Bengal the disease is also rapidly spreading, especially in some of the up-country towns. Both Bombay city and Calcutta show signs of a further recrudescence. The detailed figures published are: Bombay Presidency, 4154 deaths; Bombay city, 110; Karachi, four; Madras Presidency, 353;

Calcutta, 18; Bengal, 2005; United Provinces, 6822; Punjab, 3940; Central Provinces, 359; Mysore State. 39; Hyderabad, 809; Central India, 132; Rajputana, 345; and Kashmir, eight. It must be borne in mind that these figures of weekly mortality are only approximate as registration is everywhere very defective. It is possible that the true mortality from plague is 50 per cent. over the published figures.

The Septic Tanks on the River Hooghly.

The outcry made by the Hindu community some months ago against the drainage of the septic tanks connected with several mills on the river Hooghly above Calcutta led to the appointment of a committee of inquiry. Its report has just been published. It was found that the effluents varied in purity but for the most part contained no perceptible solids and were non-putrescible. Chemical analysis showed, however, that the results compared unfavourably with reports of similar analyses made in England. The nitrates were in insufficient amount while the albuminoid ammonia was in excess. Bacterial analysis also showed a large number of colon bacilli and a general bacterial contamination. The amount of river water with which the effluents became diluted was not capable of any trustworthy estimate. The committee considers that these septic tanks are a vast improvement on the old system of latrines and that a stoppage of the use of the tanks would probably increase the pollution. It suggests certain methods of improving the effluents. The great danger is in the dry season when the river flow is small and it concludes that the effluents in their present condition should not be emptied into the river above the waterworks or near them. The objections of the Hindu community are on religious grounds by some members and on sentimental grounds by others. As it is impracticable to pass the effluents over land it is suggested that, failing improvement in character, the fluid might be used as feed water for boilers; but here, again, difficulties may arise from the workmen. There is little doubt that these septic tanks can be improved in construction and use but the objections against them are, I think, fanciful in the circumstances present here. It is forgotten how much the river is polluted by the inhabitants living on the banks and by the thousands who go down to bathe and considering the size of the river the objection against the septic tank effluents from a few mills is simply a vexatious one and probably arises from an ignorance of the process by which the sewage is purified in these tanks.

Jan. 7th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University Intelligence.

SINCE my last letter Mr. H. Gilbert Barling has been appointed by the Council of the University dean of the medical faculty. Mr. Barling, who came to Birmingham nearly 25 years ago, is professor of surgery, honorary surgeon to the Birmingham General Hospital, and a member of the Council of the Royal College of Surgeons of England. Since the inception of the University he has been vice-dean of the faculty. He has made many valuable contributions to surgical literature. His lectures upon appendicitis delivered at the University under the Ingleby trust were at the time, and have remained since, one of the most authoritative works upon the subject. The University is to be congratulated upon its good fortune in being able to induce Mr. Barling to spare from his other work the time requisite for the office, the successful tenure of which is felt to be insured by all those who are acquainted with his business ability and tact. The principal's report for the years 1904–05 contains a reference to the Dental Hospital. For some time past the students in dentistry have suffered from the undoubted inconveniences inseparable from so antiquated a building as the old Dental Hospital. All interested in the school will be glad to hear that such disabilities are to be speedily removed by the opening of a new hospital possessed of all modern requirements. It is estimated that the building will cost £10,000, of which more than half has already been raised. The principal in his report took the opportunity of saying how closely allied the medical and the dental faculties were in their fortunes and that he hoped a special effort would be made to open the building free of debt. He said that as the only school in the country at present privileged to grant a degree in dentistry it was incumbent upon the university authorities to see that the preparation for their degrees was of as thorough and scientific a nature as possible.

The Health Committee.

The question of the milk-supply in Birmingham has occupied of late the attention of the health committee and in this connexion a circular letter has been addressed by the medical officer of health to the farmers of the district pointing out the ways in which contamination occurs and the rapidity of the multiplication of germs in milk. To prevent these mischievous results the farmers are requested to see that more regard is paid to cleanliness by the milkers and that the milk is stored under such conditions that its temperature will not be higher than 45° F. A long report on the method by which "humanised" milk is distributed in Liverpool was presented by a deputation of the health committee which had recently visited that city for the purpose. It is believed that some such scheme will be adopted in Birmingham. At the same meeting the question of the advisability of framing regulations for hairdressers' and barbers' establishments was also considered. The matter was referred to the medical officer of health for his consideration.

Birmingham, Tame, and Rea Drainage Board.

At the last meeting of the above board the members were strongly advised by their engineer, Mr. J. D. Watson, to substitute as opportunity arose bacteria beds for the intermittent filters now in use at their farm. He supported his recommendation by stating that 15 acres of bacteria beds were capable of dealing with the sewage for which at present 1000 acres of intermittent filtration beds are required, that this would set free a great area for growing grass and roots, and that the effluent from bacteria beds is purer than that from filtration beds.

The Health of the City.

The death-rate in Birmingham for the week ending Jan. 14th was 19·8 per 1000, as compared with 21 per 1000 in the previous week; the zymotic death-rates in the same periods were 1·0 and 0·7. The number of patients in the scarlet fever hospital and in the typhoid fever wards was in each case reduced, the gratifying report being made that there was now no pressure on the accommodation in the isolation hospitals. The slight rise in the zymotic death-rate was due to deaths from whooping-cough and pulmonary tuberculosis. Influenza has been accountable for a large amount of sickness in the city and in the surrounding Black Country.

The Floodgate-street Area

At a meeting of the Birmingham magistrates held on Jan. 19th to consider a report of the licensing committee upon the Licensing Act, 1904, it was possible to obtain some information as to the probable attitude to be adopted by the committee towards the Floodgate-street area. Mr. Chance, the chairman of the committee, said he believed there were some who thought that considering the report of the medical officer of health the magistrates should confine their attention to this area. He did not think so; he pointed out that of the houses scheduled in this area more than half were fully licensed houses, many of which it would be very expensive to close. He considered that more good would be done to Birmingham if the committee was not restricted to this area and if it was allowed a little latitude to go outside. A motion, however, that the attention of the committee should be first drawn to the number of superfluous licensed houses in this area was carried.

Jan. 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Princess Christian at the Liverpool School of Tropical Medicine: Major Ronald Ross's Lecture on the Progress of Tropical Medicine.

Her Royal Highness Princess Christian visited Liverpool on Jan. 12th to attend a lecture by Major Ronald Ross, C.B., F.R.S., late I.M.S., on the Progress of Tropical Medicine and on some phases of the work of the Liverpool School of Tropical Medicine. Her Royal Highness was accompanied by the Princess Victoria of Schleswig-Holstein, the Earl and Countess of Derby, and the Right Hon. Joseph Chamberlain, M.P., and Mrs. Chamberlain. Sir Alfred Jones, K.C.M.G., who presided, explained to Her Royal Highness that

Liverpool was doing what it could to push forward the study of tropical medicine which was for the common good. The tropics had already been made more habitable for the British people. The people of Liverpool had enabled them to spend £50,000 on the work but nothing would have been done but for the example of Mr. Chamberlain and the thanks of the school were due to him. Major Ross in the course of his lecture remarked that disease was the principal bar to progress in tropical countries. Particularly in the case of tropical Africa one was struck with the fact that that great continent still remained uncivilised in spite of its proximity. There was only one way to grapple with the great enemies of civilisation: they must sit down patiently with the microscope and the test-tube. Having dealt with the vague medical knowledge of tropical maladies up to a recent time he said that perhaps the earliest light came from a study which was despised by many—namely, that of the parasites of man and of animals. Tracing the progress of the study he referred particularly to the discovery that the malaria germ was carried from the marshes to human beings by mosquitoes. It was often asked whether malarial fever could not be produced in other ways than by the bite of mosquitoes. He could only say that no satisfactory evidence of this had yet been given and, moreover, that for zoological reasons it was exceedingly unlikely that the parasite, which already possessed a sufficiently complex life-history, could exist in other localities besides its own proper hosts, man and mosquito. The fact that yellow fever was carried by mosquitoes only was now determined with the utmost certainty. The germ had not yet been found but the manner in which it attacked was known. During the last quarter of a century pure science had made discoveries which had resulted in the partial or complete solution of the problems in connexion with five or six tropical diseases but it did not follow that life would be benefited. Neither the general public nor scientific men seemed fully to realise this point. If to-morrow he were to discover a method of checking any disease, so simple that it could be applied without the smallest difficulty, were they convinced that it would be so applied the day after to-morrow? He knew that it would probably not be applied for years or perhaps even for centuries. That seemed a bitter thing to say and some might doubt whether it was true but he would give a case where it had actually happened—he meant the case of vaccination against small-pox. When, therefore, the mode of propagation of malaria was discovered it became obvious that a great propagandism must be carried out. The public must be informed of the new discoveries and the State must be requested to take action. They owed the initiative in that matter to Mr. Chamberlain who, early in 1899, publicly formulated a scheme for the creation of schools of tropical medicine—that was to say, he at once recognised the public importance of tropical medicine and at the same time did his utmost to encourage the further study of it. The Liverpool School, ably led by Sir Alfred Jones, had collected funds for a large amount of pure scientific work, also for direct sanitary labour; and the London School and the schools of Hamburg and elsewhere had contributed their share. A few months after the Liverpool School was established it sent out an expedition to Sierra Leone which discovered the species of malaria-bearing mosquitoes there existing and showed exactly how to deal with the disease in large towns. It sent other expeditions to the Gambia, to the Gold Coast, to Lagos, and to the Congo. These had mapped out the health conditions of the coast in a manner which was never attempted before. They had sent out no less than 14 of such expeditions to various parts of the world and had published 12 separate works and reports on the subject. He explained what the anti-mosquito crusade accomplished, resulting in improvement of health in some districts and in the disappearance, for instance, of yellow fever from Havana. At Ismailia the cases of malarial fever fell within one year from 2000 to 200. Illustrations of malarial, yellow fever, elephantiasis, and other germs in various phases of development were then given on a screen and explained by Major Ross. A vote of thanks to the lecturer was proposed by Mr. Chamberlain which was cordially carried.

Return of Professor Rubert Boyce from West Africa: the Health of West Africa.

Professor R. Boyce, who with Dr. Clarke and Dr. Evans went out recently from Liverpool to the malaria-infected districts on a special expedition despatched by the Liverpool School of Tropical Medicine, returned to Liverpool on Jan. 22nd. It is understood that valuable knowledge has been acquired which will be embodied in a report. Professor Boyce states that although the West Coast of Africa will not become a health resort some parts in certain seasons may become quite healthy. The health of Europeans in many of the coast towns now shows a marked improvement and will no doubt continue to improve. This is attributed to increased sanitation, including anti-mosquito measures, new residences in selected quarters, and more careful selection of those who go out and who in consequence realise how to live in a tropical climate and to avoid infection from malaria and other diseases.

Opening of the James Hakes Memorial Hall.

At the annual meeting of the Liverpool Medical Missionary Society held on Jan. 23rd the ceremony of opening the new dispensary building and James Hakes Memorial Hall took place. Miss Hakes declared the buildings open and addresses were delivered by Dr. William Carter, J.P., and Dr. Bond, the medical officer to the society. The late Mr. James Hakes, who was surgeon to the Liverpool Royal Infirmary, was one of the founders and most liberal supporters of the mission and Miss Hakes made the generous gift of £1000 to build the new hall in memory of her father. The whole cost amounted to £3900. There are consulting and dispensary rooms and accommodation for nurses and others in the medical division of the buildings.

Hospital Extension at Ormskirk.

A meeting of the Ormskirk and Lathom joint hospital board was held on Jan. 18th, at which it was resolved that the scheme of extension of the hospital and alteration of the administrative block should be proceeded with in accordance with plans submitted; and that application should be made to the Local Government Board for borrowing powers. It is estimated that the work will involve an expenditure of about £3000. A letter was read from the Earl of Derby's agent intimating that his lordship was willing to sell to the board for the purposes mentioned 5254 square yards of land in Green-lane, Ormskirk, at 2*s.* per square yard. It was resolved that the offer should be accepted and a provisional agreement entered into.

Jan. 24th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

University of Leeds.

Dr. C. M. Chadwick, who has held the professorship of materia medica and therapeutics since 1898, has tendered his resignation and the Council referred the question of the "teaching and manner of dealing with the chair, which includes the subjects of materia medica, practical pharmacy, pharmacology, and therapeutics," to the Board of the Faculty of Medicine. The following report of the board on this subject was approved by the Senate and adopted by the Council:—

In virtue of the increasing importance and extent of the subject the Board of the Faculty of Medicine recommend the creation of a chair of pharmacology, the occupant of which shall give his whole time to the subject. The board is also of opinion that a laboratory shall be attached to the said chair. Pending the creation of a chair of pharmacology the board recommend that the present chair of materia medica and therapeutics be not now filled, but that a lecturer with a seat on the faculty and the board be appointed for the intervening period on such terms and conditions as will enable the recommendations in this report to be carried into effect when practicable. The board is of opinion that the appointment of a lecturer at the present time is the better course for the following reasons: (1) It will facilitate the appointment of a professor of pharmacology when the Council are able to make the appointment; (2) it affords a means for the continuation of the instruction in therapeutics when the chair of pharmacology is created; and (3) it thereby avoids the compulsory retirement of the lecturer appointed for the interregnum.

Jan. 24th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Employment of Tramps in Glamorgan.

REPRESENTATIVES from each of the eight boards of guardians in Glamorgan and from several of the sanitary authorities in the county met together in Cardiff on Jan. 21st to consider the practicability of establishing a labour farm for tramps and other persons out of employment. Mr. Joseph

Fels offered to purchase land in any part of the county suggested by responsible local authorities and to let it to them at a peppercorn rent for three years; at the end of this period the land could be given up altogether to Mr. Fels or purchased from him at the price that he gave for it. A suggestion was made that 100 acres should in the first instance be purchased on the terms offered and managed by a joint committee of the local authorities. Employment for 100 men would thus be obtained and it was estimated that the cost of the undertaking would not entail an annual expenditure equal to a farthing rate over the whole county. No definite conclusion was arrived at with regard to the offer of Mr. Fels but it was decided to report the details of the proposal to the several authorities who were represented at the conference. A deputation consisting of Welsh Members of Parliament and others was appointed to bring under the notice of the Government a resolution unanimously adopted to the effect that the problem of the unemployed being national in its scope could only be effectually dealt with by the State and that the Government be therefore called upon to deal with the question without delay.

Bath Small-pox Hospital.

The provision of a small-pox hospital has for several years been under consideration by the corporation of Bath, the only accommodation at present existing for the isolation of cases of the disease being in the iron buildings which are used also for the isolation and treatment of other infectious diseases. Great difficulty has been experienced in obtaining a suitable site for the hospital but during last year ground was acquired outside the city boundary and plans were drawn for a well-equipped institution to be built of Bath stone. The proposed buildings included a small administrative block and a pavilion with two six-bed wards and two one-bed observation wards. The cost was estimated at £3750. At the meeting of the corporation held on Jan. 17th the sanitary committee recommended the carrying out of the work above indicated but so great was the opposition to the scheme from the residents in the neighbourhood of the proposed site that it was decided to ask the committee to reconsider the whole question. The principal argument of the opponents of the scheme appears to have been that a portion of the site, though not of the actual hospital buildings, would be within half a mile of the union workhouse.

The Sale of Food and Drugs Acts in Bristol.

In the administration of the Sale of Food and Drugs Acts in Bristol during 1904 the samples of food submitted for analysis numbered 735 and 52 of these were condemned by the public analyst. Of milk 278 samples were taken and 30, or 10·8 per cent., were found to be adulterated. It is satisfactory to find that this percentage is lower than that of 1903, when it was 13·9. At a recent meeting of the corporation the inspector under the Sale of Food and Drugs Acts was appointed to administer the Shop Hours Closing Acts and his salary was raised from £200 per annum to £300. He was also given an assistant at a salary of £130 per annum. At the same meeting of the city corporation the sanitary committee recommended an increase in the salaries of the five district surveyors who now receive from £220 to £240 per annum and also advised the appointment of an additional surveyor in view of the recent extension of the city boundaries. These recommendations were strongly opposed and in the end successfully. The duties of an inspector under the Sale of Food and Drugs Acts are unquestionably responsible and require the exercise of tact and firmness but it is a little difficult to understand why they should be esteemed of more value than those of trained sanitary officers whose want of skill might do incalculable harm.

Bristol Dispensary.

The Bristol Dispensary was established so long ago as 1775 for the relief of the sick poor at their own homes but many patients are now treated either at the institution on Castle-green or at the branch at Bedminster. During 1904 the number of persons under treatment was 10,556, a slight decrease upon the previous year. The finances of the dispensary appear to be satisfactory, there being a balance in hand of £10, although on the year's working there was a loss of £15.

Clutton Workhouse.

At a recent meeting of the Clutton (Somerset) board of guardians, which represents a population of 25,000 persons, Mr. Preston Thomas, Poor-law inspector of the Local Government Board, animadverted upon the accommodation for tramps in the workhouse, more especially as regards the sleeping accommodation and the absence of a bath and means for disinfecting clothes. At present in wet weather the want of proper shelter prevents the tramps carrying out their allotted work and Mr. Thomas urged that such arrangements should be made that it would be possible for each man to do a day's work in return for his board and lodging. At the next meeting of the board of guardians the question of erecting new tramp wards will be considered.

Vagrancy in Wiltshire.

The chief constable of Wiltshire has reported to the county vagrancy committee that during last year 36,991 tramps were relieved, compared with 28,553 in 1903. The increase was very noticeable in the last quarter, the number in each year being respectively 11,479 and 7859. A midday meal was provided for 14,405 persons in 1904 at a cost of £57 while in 1903 there were fed 11,430 at a cost of £44.

Merthyr Education Committee.

Mr. D. J. Thomas, medical officer of health of Merthyr Tydvil, has been appointed medical officer to the education committee at an annual salary of £30. Among his other duties he will be required to visit, when instructed by the committee to do so, any teachers who are frequently absent from duty on account of alleged illness and to report to the committee upon the circumstances of the case.

Horfield Inebriate Reformatory.

The Home Secretary has granted a new certificate to the Horfield Inebriate Reformatory, in the county of Gloucester. The number of females to be detained is not to exceed 20. The reformatory is reserved for the better class of inebriates committed under the Inebriates Act, 1898, and no inmate is to be admitted except by transfer from another reformatory.

Jan. 24th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Western Infirmary, Glasgow.

THE new dispensary in connexion with the Western Infirmary, Glasgow, was formally opened on Jan. 18th by Lady Blythswood. Sir Matthew Arthur, chairman of the managers, presided, and among those present were Lord and Lady Blythswood, Sir John and Lady Primrose, Sir Lauder Brunton, Sir Hector Cameron, Principal Story, Mr. Henry E. Clark (President of the Faculty of Physicians and Surgeons), Professor McCall Anderson, Dr. J. Finlayson, Dr. Donald Macleod, Dr. D. J. Mackintosh, and Mr. Henry Johnston. The chairman, in giving an outline of the progress of the work, said that a public appeal for the necessary funds to erect a new dispensary was made in 1897 and resulted in the raising of about £24,800. Estimates were accepted in 1902 and building operations were commenced but the cost of the building had exceeded the amount subscribed by £10,000. Besides the relief it afforded to the sick poor a dispensary such as that was an important adjunct to medical education because it was compulsory for students to attend the out-door practice of a hospital, and here there were on an average about 400 students enrolled. In the design of the buildings attention had therefore been given to the provision of increased facilities for teaching and to extending the opportunities for scientific study. The architect was Mr. John James Burnet and the managers were much indebted to Dr. Mackintosh for the careful attention that he had given to the details which would greatly facilitate the working. After Lady Blythswood had declared the building open the chairman, on behalf of the contractors, presented her with a silver bowl as a memento of the ceremony and Lord Blythswood in a short speech returned thanks for his wife. Sir Lauder Brunton then delivered a brief address, dealing chiefly with the benefit of dispensaries to the community at large, the great necessity for a pure milk-supply, and the establishment of a national league for physical education and improvement. Such a league, he said, was in process of formation and would strengthen existing organisations having similar objects. The proceedings then terminated with votes of thanks to Lady Blythswood, Sir Lauder Brunton, and Sir Matthew Arthur.

Death of Brigade-Surgeon Alexander Johnston.

The death occurred on Jan. 18th at Ryde, Isle of Wight, of

Dr. Alexander Johnston, brigade surgeon, in his sixty-fourth year. Dr. Johnston was a native of Aberdeen and studied medicine at Marischal College, where he graduated as M.D. in 1864. His ambition lay in the direction of the Army Medical Service and he was successful in receiving an appointment to join the forces on the West Coast of Africa where the rest of his life was chiefly spent, Lagos, Cape Coast Castle, and the other stations being visited in the course of his term of office. He retired on a pension several years ago and afterwards took up residence at Queen's-road, Aberdeen, but on the death of his wife he went to live in the Isle of Wight on account of the state of his health. Dr. Johnston had no family. He was of a retiring disposition and took no part in public affairs but was highly esteemed in the profession and by all with whom he was associated.

County Hospital Dispute.

Sheriff Lee has just decided a somewhat important action which was raised in Arbroath Sheriff Court at the instance of the Dundee and Forfar district committees of Forfar county council against the Arbroath district committee for payment of £274 for the maintenance of patients sent from the Arbroath district of the county to the pursuers' joint hospital at Forfar during the year ending Whitsunday, 1904. The sum sued for included a proportion of the permanent charges of building and maintaining hospital and staff and the defenders pleaded that they were liable only for payment of a rate per patient. The pursuers' account showed that the rate was 30*s.* per week and the defenders tendered an offer of £49 10*s.* in full, due for the treatment of patients for 33 weeks. Sheriff Lee issued an interlocutor in which he gave effect to the defenders' contention, finding the pursuers liable in expenses. He held that no other interpretation could be put on the pursuers' letter of May 28th, 1903, than that the defenders were liable only for payment of a certain rate per patient and he found no warrant or authority in that letter for charging the defenders with a proportion of the permanent charges of the hospital. In a note to his interlocutor the sheriff characterised the contract which the pursuers alleged had been entered into as a gambling contract and said that no public body was entitled to enter such.

Jan. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Public Health of Dublin.

AT the last meeting of the public health committee, which was held in the municipal buildings on Jan. 13th, Sir Charles Cameron reported that the death-rate for the week ending Dec. 31st, 1904, was 3 per 1000 below the mean rate, while the zymotic death-rate was 2 per 1000 above the mean, being raised by an outbreak of measles which during the last five weeks had caused 50 deaths. The epidemic was almost altogether confined to the south side of the city, only one case having occurred on the north side. In other words, while no less than 50 deaths took place on the south side of the river, only one case was notified on its northern side.

Death of Professor Ambrose Birmingham, M.D. R.U.I., F.R.C.S. Irel.

Professor Ambrose Birmingham, one of the best known and most highly esteemed of the medical teachers of Dublin, died on the night of Jan. 23rd at the early age of 41 years. After a most distinguished career as an undergraduate of the Royal University of Ireland he became demonstrator, and afterwards professor, of anatomy at the medical school of the Roman Catholic University. He was a highly successful lecturer and by his talents and energy soon doubled the number of students seeking education at the medical school.

The Milk Question in the North of Ireland.

If the public of the North of Ireland are not initiated into the mysteries of "the milk question" it will not be the fault of the Belfast local papers in which we are being treated almost every day to lectures, letters, and articles on this subject. The discussion began a short time ago when a public lecture was delivered in which sterilised milk was strongly recommended for infants under one year old, as well as for adults who were weak or who were suffering from diarrhœa, consumption, and wasting diseases; and it was also urged that sterilised milk was required as a food for those attacked with infectious or zymotic fevers. This teaching has raised a storm of opposition on the part of those who contend that sterilised milk—as has been demonstrated both by scientific investigation and by clinical experience—is not merely objectionable but is often positively dangerous to children owing to its diminished nutritive value. Those who object to sterilised milk say that what is needed is not a method of treating milk like sterilisation which simply palliates effects, does no real good, puts a premium on carelessness and uncleanliness, and tends to retard progress in the right direction; what is wanted, they say, is a really pure clean milk which is "dairied" and distributed in such a way that the consumer receives the milk just in the same condition as it left the cow. It is hoped that some good will come out of this discussion and that the health authorities of Belfast will try to keep pace with the teaching of clinical experience and of scientific experiments and will really put in force the laws, so that we may have clean dairying and hygienic distribution of milk. It is very much to be regretted that the Belfast public health committee so rarely takes the initiative in any public health reform, only moving when compelled to do so by the force of outside public opinion.

Death of Dr. O. M. Praeger.

Dr. O. M. Praeger, resident surgeon in the fever department of the Belfast union workhouse, died on Jan. 16th. He was 31 years of age. A member of an old and distinguished Belfast family, Dr. Praeger was educated at Queen's College, Belfast, and graduated in 1900 in the Royal University of Ireland. He was a popular student and took an active share in 1904 in the bazaar for the Students' Union and when the Students' Union was opened he was president of it and he was first editor of the college magazine, "*Q.C.B.*" After graduating he was appointed on the resident staff of the Belfast workhouse and for four months last year he was resident officer of the Purdysburn Small-pox Hospital. At the usual meeting of the Belfast board of guardians held on Jan. 17th the very greatest surprise and regret were expressed by the chairman and all the guardians at the sad news of Dr. Praeger's sudden death and throughout Belfast the very deepest sympathy is felt for his mother and for his sorrowing relatives.

Ulster Medical Society.

A meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on Jan. 19th, Dr W. Calwell, the President, being in the chair. Mr. A. B. Mitchell showed a patient, the subject of Œsophageal Stricture, with a Symond's tube which he had worn for six months, and a case operated on for Hare-lip and Cleft Palate. Dr. W. B. McQuitty read notes of a case of General Paralysis. Dr. H. L. McKisack read a paper on the Treatment of Pneumonia by the External Application of Ice, and Dr. J. C. Rankin read a paper on X Ray Treatment and showed several cases of rodent ulcer, lupus, &c., treated by this method. In the discussion which followed the reading of these papers, Professor J. A. Lindsay, Dr. A. Dempsey, Mr. Mitchell, and the President took part.

Coronership for Belfast.

For the coronership of Belfast, vacant through the death of Mr. E. S. Finnegan (solicitor), Dr. James Graham (late chairman of the public health committee) and Mr. John Finnegan (son of the late coroner) are candidates.

A Medical High Sheriff for Belfast.

Dr. Henry O'Neill has been nominated as High Sheriff for Belfast by the city corporation, of which he is a member. He is the first medical man to attain this distinction in Belfast.

Jan. 24th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Practice in the Canton of Zürich.

THE various "physical health societies" in the canton of Zürich have a membership of several thousand persons and they have been trying to bring in a law sanctioning "free medical practice" in the canton. The effect of such an enactment would be to encourage quack practitioners of every sort. Among the 24 cantons in Switzerland there are

only two (Glarus and Appenzell) in which "free practice" is permitted. The medical men of the canton did all they could to prevent measures so disastrous to the health of the population, especially as regards infective cases, being introduced. The question was thoroughly discussed in dozens of daily and weekly newspapers and in many meetings convened for the purpose; many thousands of Dr. Alexander's pamphlet on the disastrous results of "free medical practice" in Germany were also distributed. These discussions have had the effect of counteracting the hostility of the "physical health societies" to pharmaceutical and therapeutical science. On Nov. 30th, 1904, the question put to the public vote was carried against "free medical practice" by 51,000 votes against 22,000. Meanwhile the official authorities have consented that a professor should be appointed at the University to lecture on physical and dietetic therapeutics; this also is in conformity with the views of the medical profession at large, as it is desirable that public opinion should be able to recognise the errors of the statements made by the "physical health societies." The Cantonal Medical Society of Zürich at its last meeting appointed a committee composed of two professors, members of the medical faculty of the University at Zürich, and five medical practitioners to consider this question and to submit a report to the authorities.

Treatment of Infantile Broncho-pneumonia.

Dr. Theodore Zangger of Zürich has published in the *Correspondenzblatt für Schweizer Aerzte* of Jan. 1st an article on the Treatment of Infantile Broncho-pneumonia. This disease is responsible for one-twelfth of all the deaths in Switzerland, nearly 5000 children succumbing to it every year. As regards the mortality of this malady there are very few recent statistics based on a large number of cases. Bartels, von Ziemssen, and Steffen report a mortality of 41 per cent. in 231 cases. Roger finds a mortality of 75 per cent. in pneumonia complicating whooping-cough and Comby the even more appalling mortality of 81 per cent. in 715 cases of pneumonia after measles. Dr. Zangger has carefully examined the trustworthy statistics of the town of Zürich. Both the Children's Hospital (98 cases) and the out-patient department of the University (802 cases) report only 20 per cent. of deaths. 146 of these cases refer to pneumonia after measles, 108 to pneumonia after whooping-cough, and 476 to simple broncho-pneumonia. Dr. Zangger believes that proper bath treatment, the details of which he published in THE LANCET of June 28th, 1902, p. 1826, will further diminish this mortality. He describes at length ten cases thus treated, in all of which the inflammatory process subsided within eight days, generally after the employment of from two to eight baths. When it is considered that the mortality of whooping-cough and measles almost entirely depends on the favourable or unfavourable issue of a complicating pneumonia, this treatment of infantile pneumonia, which need not supersede medicinal treatment, deserves the serious attention of the profession.

Zürich, Jan. 23rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Variola Hybrida (So-called).

Dr. Happel read before the American Medical Association in 1901 a paper in which he described a species of small-pox as variola hybrida and he further gave it as his opinion that the epidemic then prevailing widely in the United States was for the most part not genuine small-pox but a sub-species. Dr. A. H. Mansfelde of Ashland, Nebraska, read before the Nebraska State Medical Association at a meeting held last May at Omaha, Nebraska, a paper in which he upheld the views of Dr. Happel. Dr. Happel defines variola hybrida as a modification of small-pox in which not the person but the virus which produces the disease has undergone a vital change and he states that the two modifications of small-pox, varioloid and variola hybrida, are nowhere to be taken as convertible varieties of genuine small-pox. Dr. Mansfelde believes variola hybrida to be a species of small-pox but that is far from the disease being entitled to be called genuine small-pox. He thinks that it is a hybrid form of the classical disease, hybridised in its seed, whether that be of vegetable or of animal origin. The views of Dr. Happel and Dr. Mansfelde have received little support in the United States, the great majority of the medical profession regarding the epidemic as one of genuine small-pox.

Jan. 14th.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Mr. Ivor L. Tuckett, Trinity, has been appointed an additional demonstrator of physiology.—The following candidates have passed the examination in Tropical Medicine and Hygiene and are entitled to the University diploma:—

D. H. Ainslie, D. Alexander, C. A. Bentley, J. M. Buist, J. H. Cook, T. G. D. Cooper, J. W. Cornwall, W. A. Densham, and C. E. Williams.

There were 15 candidates.—The following degrees were conferred on Jan. 19th:—

Doctor of Medicine.—R. H. Marten, Caius.
Bachelor of Medicine.—F. L. Woods, Caius.
Bachelor of Surgery.—G. F. Bird, M. F. Grant, C. D. Mathias, and S. A. Owen, Trinity; O. V. Payne and C. M. Stevenson, St. John's; H. M. Clarke, Clare; G. T. Western, Pembroke; W. R. Higgins, W. Lowe, W. H. Thresher, and F. L. Woods, Caius; F. W. M. Palmer, Jesus; R. F. Moore, Christ's; R. Puttock, Emmanel; and E. W. Sheaf, Downing.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—T. H. Jones (Sections I. and II.), King's College Hospital; R. C. Richards (Section I.), University College Hospital; A. M. Walker (Sections I. and II.), Manchester; and J. M. Wall (Sections I. and II.), Westminster and St. Thomas's Hospitals.
Medicine.—J. B. Bradley (Section I.), Birmingham; P. F. Howden, Bristol; T. H. Jones (Sections I. and II.), King's College Hospital; T. R. Roberts (Section II.), London Hospital; J. H. K. Sykes (Sections I. and II.), Leeds; and M. C. Vivian (Section I.), Royal Free Hospital.
Forensic Medicine.—A. B. Gosse and M. E. Jeremy, Royal Free Hospital; T. H. Jones, King's College Hospital; and J. H. K. Sykes, Leeds.
Midwifery.—C. G. Grey, St. Bartholomew's Hospital; M. E. Jeremy, Royal Free Hospital; T. H. Jones, King's College Hospital; A. M. Walker, Manchester; and P. C. West, St. Thomas's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—P. F. Howden, M. E. Jeremy, T. H. Jones, and A. M. Walker.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. T. Tanja has been recognised as *privat-docent* of Internal Medicine.—*Berlin:* Dr. Max Martens, *privat-docent* of Surgery, has been granted the title of Professor.—*Brussels:* Dr. Brachet of Liège has been appointed to the chair of Anatomy, Dr. Sacré and Dr. Hauben, who have been Professors respectively of Systematic and Topographical Anatomy, having resigned.—*Cracow:* Dr. Alexander Bosovski, *privat-docent* of Surgery, has been promoted to an Extraordinary Professorship.—*Göttingen:* Dr. A. Pütter has been recognised as *privat-docent* of Physiology.—*Lemberg:* Dr. Leon Popielski of St. Petersburg has been appointed to the chair of Pharmacology and Pharmacognosis.—*Lyons:* Dr. Rollet has been promoted to the chair of Ophthalmology vacant by the death of Dr. Gayet.—*Munich:* Dr. Hans Gudden, *privat-docent* of Mental Diseases, has been promoted to an Extraordinary Professorship.—*Würzburg:* Dr. Wilhelm Weygandt, *privat-docent* of Mental Diseases, has been promoted to an Extraordinary Professorship.

UNIVERSITY OF OXFORD.—James Ritchie, M.A., B.Sc., M.D. Edin., reader in pathology, has been elected to an Ordinary Fellowship at New College.—Degree days for the present term are: Thursday, Jan. 26th; Thursday, Feb. 16th; and Thursday, March 16th.—The examination for a Radcliffe Travelling Fellowship will commence on Tuesday, Feb. 28th. Names must be sent in on or before Saturday, Feb. 11th. (Full particulars will be found in the *University Gazette* of Dec. 6th, 1904.)

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—In aid of the endowment of cots at this hospital (an institution which has "a reliable income of only £763" and which is now being rebuilt to accommodate 200 patients), a gigantic Christmas tree and children's fête with music will be held on Thursday, Feb. 2nd, from 3.30 to 6 P.M., at the Kensington Town-hall. The entertainment will be opened by the Mayor. The tree is to be illuminated by electricity and each child will receive at least one present. Tickets, 2*s.* 6*d.* each, by private sale only, on or before Feb. 1st, from the honorary secretary, 50, Albert Hall

Mansions, London, S.W., or the honorary secretary, Royal Waterloo Hospital Ladies' Association, 16, Brook-street (corner of New Bond-street), W.

ROYAL DENTAL HOSPITAL, LEICESTER-SQUARE.—This hospital has received a donation of £100 from the Worshipful Company of Goldsmiths.

A CENTENARIAN.—Mrs. Pritchard Bembridge of Sidmouth, Devon, reached the age of 104 years on Jan. 20th.

UNIVERSITY COLLEGE, BRISTOL.—The sixth annual dinner of the University College Colston Society will be held on Jan. 31st under the presidency of the Right Hon. Lewis Fry, with the Rev. Dr. Butler, Master of Trinity College, Cambridge, and Sir Oliver Lodge, Principal of the University of Birmingham, as the guests of the evening. The society was founded in 1899 for the purpose of perpetuating the memory of Edward Colston and assisting University College, Bristol, in such a manner as the committee of the society might approve. Last year the sum of £400 was handed by the society to the building fund of the College. The Government grant to the College for 1905 will be £2000, an increase of £800 compared with 1904.

ROYAL LONDON OPHTHALMIC HOSPITAL GUILD (MOORFIELDS EYE HOSPITAL).—The fifth annual general meeting of the Royal London Ophthalmic Hospital Guild (Moorfields Eye Hospital) was held on Jan. 23rd at 20, Portland-place, W., by kind permission of Lady Samuel. Sir Marcus Samuel presided, supported by Mrs. Lang, head of the Guild, Lady Agnes Frank, Lady Russell-Reynolds, Lady Maurice, the Lady Mayoress, Mr. H. P. Sturgis (chairman of the hospital), Mr. A. Gordon Pollock, Sir James Reid, and a large number of members and friends. The report stated that H.R.H. Princess Christian of Schleswig-Holstein had graciously consented to become president of the guild. The guild founded to assist the hospital, which had to contend with lack of funds and public interest, had been able to aid with blankets, coverlets, and sheets for the beds, and for the past two years to maintain a cot and woman's bed in the wards. The nurses' library had been replenished and members had rendered personal service by visiting the patients. An interesting event was the centenary dinner, when the collection at the "Guild table" amounted to £136, special thanks being due to Mrs. Lang for the trouble which she took in the matter. The country centres were growing in importance and two new ones had been added—at Bury St. Edmunds and Pinner. The members now numbered 200, with 100 associates, 50 having joined during the year and only three had resigned. On the motion of Lady Reynolds the report was adopted. Mr. Sturgis, on the part of the hospital, expressed the gratitude of the committee for the valuable help of the guild, every penny subscribed being spent in the most beneficial manner. Mr. Pollock also bore testimony to the excellent work of the guild and its aid to the centenary fund, which he hoped would eventually pay the rent and taxes. The officers and council were re-elected and a vote of thanks to Sir Marcus Samuel and Lady Samuel closed the proceedings.

THE LADIES' HEALTH SOCIETY, MANCHESTER.—This society held its annual meeting on Jan. 13th at the Manchester town hall. The report showed that its work extends over certain of the poorer parts of Manchester and Salford, which are divided into 23 districts, in each of which lives an intelligent woman belonging to the working class called a health visitor, paid by the society, and supervised by ladies who give of their time and energies in helping their poorer sisters. The society is assisted by the corporations of Manchester and Salford which pay the salaries of nine and of four visitors respectively. Dr. J. Niven gives his valuable coöperation. The visitors go to the dwellings in their districts and where disease breaks out they show how to disinfect. Occasionally they find overcrowding, stopped drains, structural defects, and other insanitary conditions may be discovered and reported to the health authorities. The Lord Mayor (Councillor T. Thornhill Shann), in moving the adoption of the report, spoke in high praise of the society's usefulness. Its work is done among the poorest and if we are to have "a strong and better population in the future we must begin with the rising generation. As to the poor mothers themselves they had to go early to their work and had no chance of learning household duties or the bringing up of children." But mothers ought not to be so ignorant and helpless or obliged to work so near their confinement or so soon after it. We may learn something from Germany and from the Jews as to these matters. Dr. Niven, in seconding a vote of thanks to the Lord Mayor, said that he had been coming to the conclusion that "a great many of the babies who died from summer diarrhœa died from starvation"; that the mothers did not know what food to give them and had not enough. "Many poor mothers could not suckle their children because, for lack of proper nourishment, they were in a state of physical misery." This is a pitiful statement to have to make: "Pity 'tis, 'tis true."

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

Autobiography of Frederick James Gant, F.R.C.S., Consulting Surgeon to the Royal Free Hospital, Author of Works on Surgery, Science, and Religion, and Women of the Times. Price 3s. 6d. net.

Ship Surgeon's Pocket-book and Medical Officer's Log. By W. E. Dawson, formerly Admiralty Surgeon and Agent; Medical Officer, Imperial Mail, Union-Castle, African, Red Cross, Anchor, and Glen Lines. Price 2s. 6d. net.

The Preparation and After-treatment of Section Cases. By W. J. Stewart McKay, M.B., M.Ch., B.Sc., Senior Surgeon to the Lewisham Hospital for Women and Children, Sydney. Price 15s.

BURROUGHS, WELLCOME, AND CO., London, Sydney, and Cape Town.

Wellcome's Photographic Exposure Record and Diary, 1905. Price not stated.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.

The Other Side of the Lantern. An Account of a Commonplace Tour Round the World. By Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., Sergeant-Surgeon to H.M. the King, Surgeon-in-Ordinary to H.R.H. the Prince of Wales. With 40 Illustrations from photographs by the Author. Price 12s. net.

CLAY, WILLIAM F., 18, Teviot-place, Edinburgh.

Avogadro and Dalton: The Standing in Chemistry of their Hypotheses. By Andrew N. Meldrum, D.Sc. With a Preface by Francis R. Japp, M.A., LL.D., F.R.S., Professor of Chemistry in the University of Aberdeen. Price 3s. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

The Treatment of Nervous Disease. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S.E., Assistant Physician, Royal Infirmary of Edinburgh, Author of "Medical Diagnosis: a Manual of Clinical Methods." Fourth edition. Price 15s. net.

GREVEL, H., AND CO., 33, King-street, Covent-garden, W.C.

Chemistry in Daily Life. Popular Lectures by Dr. Lassar-Cohn, Professor in the University of Königsberg. Translated by M. M. Pattison Muir, M.A., Fellow of Gonville and Caius College, Cambridge. Third edition, revised and augmented. Price 5s.

HAZELL, WATSON, AND VINEY, LIMITED, 52, Long-acre, W.C.

Hazell's Annual. For 1905. A Cyclopædic Record of Men and Topics of the Day. Revised to Dec. 31st, 1904. Edited by W. Palmer, B.A. Lond. Price 3s. 6d. net.

JACK, T. C. AND E. C., Causewayside, Edinburgh, and 34, Henrietta-street, London, W.C.

The Edinburgh Stereoscopic Atlas of Anatomy. Edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator of Anatomy, Edinburgh University. In Five Sections, each containing Fifty subjects, with Descriptive Text. Price of the Complete Work, £6 5s. net. Section I. (Thorax and Central Nervous System).

Radium Explained. By Dr. W. Hampson, M.A., formerly Open Scholar of Trinity College, Oxford; Lecturer under the London County Council at University College, London, 1900–1901. Price 1s. net.

JOHN BALE, SONS, AND DANIELSSON, LIMITED, 83–91, Great Titchfield-street, W.

The Surgical Treatment of Facial Neuralgia. By J. Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital, Examiner in Surgery, Royal Army Medical Department. Price 7s. 6d. net.

LIVINGSTONE, E. AND S., 15, Teviot-place, Edinburgh.

Manual of Hygiene. For Students and Nurses. By John Glaister, M.D., D.P.H. Camb., Professor of Forensic Medicine and Public Health in the University of Glasgow. Second edition. Price 6s. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

Handbooks for the Clergy. Edited by Arthur W. Robinson, B.D., Vicar of Allhallows, Barking by the Tower. Intemperance. By Henry Horace Pereira, Bishop of Croydon. Price 2s. 6d. net.

MACMILLAN AND CO., LIMITED, London.

Sociological Papers. By Francis Galton, E. Westermarck, P. Geddes, E. Durkheim, Harold H. Mann, and V. V. Branford. With an Introductory Address by James Bryce, President of the Society. Published for the Sociological Society. Price 10s. 6d.

SIMPKIN, MARSHALL, HAMILTON, KENT AND CO., LIMITED, 4, Stationers' Hall-court, E.C.

The Plenum or Propulsion System of Heating and Ventilation. By Harold Griffiths, Qualified by Examination as Associate, Royal Institute British Architects; Fellow, Surveyors' Institute; Member, Sanitary Institute; Member, Incorporated Association Municipal and County Engineers, &c. Price 4s. 6d. net, post free. (Copies may also be obtained of the Author, Harold Griffiths, 8, Craig-court, Whitehall, S.W.)

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Ecole Massothérapique de l'Hôtel-Dieu (Service de M. le Dr. J. Lucas-Championnière). Massage des Membres. Par le Docteur Dagron, Ancien Interne des Hôpitaux, Ancien Aide d'Anatomie à la Faculté. Price Fr.12.

L'Œuf Humain et les Premiers Stades de son Développement. Eléments d'Embryogénie. Par J. Potocki, Professeur Agrégé à la Faculté de Médecine de Paris, Accoucheur des Hôpitaux, et A. Branca, Professeur Agrégé à la Faculté de Médecine de Paris. Préface de M. le Professeur Pinard. Price Fr.10.

SWAN SONNENSCHEIN AND CO., LIMITED, London.

Principles of Physiological Psychology. By Wilhelm Wundt, Professor of Philosophy in the University of Leipsic. Translated from the Fifth German Edition (1902) by Edward Bradford Titchener, Sage Professor of Psychology in the Cornell University. Vol. I. Price 12s.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, E.C.

Appendix XVIII. to the Second Edition of the Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England. By Samuel G. Shattock, Pathological Curator of the Museum. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLPORT, WILFRID, M.B., B.S. Lond., F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Queen's Hospital, Birmingham.

AMYOT, THOMAS ENGELHART, M.B., B.S. Durh., has been appointed House Surgeon to the Dorset County Hospital, Dorchester.

ATKINSON, J. P., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Lynton District of the county of Devon.

BARTON, GUY D., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Derbyshire Royal Infirmary.

BENNETT, THOMAS, M.B., Ch.B. Glasg., has been appointed House Physician to the Derbyshire Royal Infirmary.

BOKENHAM, T. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wokingham District of the county of Berks.

BOYD, W. R., M.D. Melb., M.R.C.S. Eng., has been appointed Physician to In-patients at the Melbourne Hospital, Victoria, Australia.

KNIGHT, J., M.D. Glasg., D.P.H., has been appointed Medical Officer of Health for Scarborough.

LISTER, HAROLD, M.B. Melb., has been appointed District Medical Officer and Public Vaccinator at Jarrahdale, West Australia.

MACKENZIE, MARION E., M.B., Ch.B. Edin., has been appointed Resident Medical Officer to the Hanley, Stoke, and Fenton Hospital for Infectious Diseases at Bucknall, Stoke-on-Trent.

MYOTT, EDGAR C., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the Derbyshire Royal Infirmary.

RIGBY, W. H., M.B. Melb., has been appointed Officer of Health at Collie District, West Australia.

ROBERTSON, A. S., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Peterborough District of the county of Northampton.

SCOTT, WALTER HENDERSON, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Newton Abbot (Devon) Hospital.

SEARANCKE, N. F., M.R.C.S. Eng., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mitcheldean District of the county of Gloucester.

YOUNG, EDWARD HERBERT, M.D. Durh., L.R.C.P., M.R.C.S., L.S.A., D.P.H. Lond., has been re-elected Medical Officer of Health for Okehampton (Devon).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer. Salary £75 per annum, with board, lodging, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Honorary Ophthalmic Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Physician.

CRUMPSALL WORKHOUSE, Manchester.—Junior Resident Assistant Medical Officer. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Pathologist and Registrar. Honorarium £100 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board and washing.

EDINBURGH, CRAIG-LEITH POORHOUSE AND HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board and apartments.

EGYPTIAN GOVERNMENT (MINISTRY OF PUBLIC INSTRUCTION).—Professor of Pathology and Bacteriology at the School of Medicine, Cairo. Salary £800 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Physician to Out-patients.

HALESWORTH, PATRICK STEAD HOSPITAL.—Surgeon. Salary 50 guineas a year.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £20, with board and residence.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEWISHAM UNION. Medical Officer for the Sydenham District. Salary at rate of £130 per annum, and fees.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, residence, &c. Also Resident House Physician. Salary £80, with board, &c.

MONMOUTHSHIRE ASYLUM, Abervagenny.—Junior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

ROCHDALE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

ROYAL EAR HOSPITAL, Dean-street, Soho-square, W.—Clinical Assistants. Also Honorary Dental Surgeon.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Qualified Clinical Assistants.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board and lodging.

SOMERSET AND BATH LUNATIC ASYLUM, Wells, Somerset.—Medical Superintendent. Salary £600 per annum, with house and allowances.

SUNDERLAND INFIRMARY.—House Physician, House Surgeon, and Assistant House Surgeon. Salary in each case £100, with board, residence, and washing.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

WALSALL AND DISTRICT HOSPITAL, Walsall.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £80 per annum, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

BRYANT.—On Jan. 17th, at Mansfield-street, Cavendish-square, W., the wife of J. H. Bryant, M.D., F.R.C.P., of a son and a daughter.

ENNION.—On Jan. 16th, at Meldreth, Royston, Herts, the wife of O. R. Ennion, M.R.C.S., L.R.C.P., of a daughter.

GORDON-GREEN.—On Jan. 23rd, at Westerton, 46, Beach-road, Southsea, Hants, the wife of Staff-Surgeon H. W. Gordon-Green, R.N., M.R.C.S. Eng., L.R.C.P. Lond., of a son.

PASSMORE.—On Jan. 20th, at Felbrig, Carshalton, Surrey, the wife of William Henry Passmore, M.R.C.S., L.R.C.P. Lond., of a son.

PAYNE.—On Jan. 19th, at Brunswick House, Cumberland Gate, Kew, the wife of Mr. E. L. Payne, M.R.C.S., L.R.C.P., L.S.A., of a daughter.

ROCHE.—On Jan. 18th, at Rochester, the wife of Lieutenant Colonel E. A. Roche, R.A.M.C., of a son.

WILSON.—On the 20th instant, at Denham House, Goldhawk-road, W., the wife of James Wilson, M.D., of a daughter (prematurely).

MARRIAGE.

BROCKWELL—SMITH.—On Jan. 18th, 1905, at Christ Church, Gipsy-hill, by the Rev. R. C. Joynt, John Brocas Chambers Brockwell, M.R.C.S. and L.R.C.P., eldest son of the late Dr. John Brockwell, of Gipsy-hill, S.E., to Annie Amelia, elder daughter of the late William Edwin Smith, of Lewes, Sussex.

DEATHS.

BEAUMONT.—On Jan. 22nd, at the Middlesex Hospital, London, W., Edward Frederic Beaumont, M.B., of Bardwell-road, Oxford, aged 28.

BIRMINGHAM.—Jan. 23rd, in Dublin, Ambrose Birmingham, M.D., Professor of Anatomy, Catholic University of Ireland, aged 40 years. R.I.P.

MOUNCEY.—At Earlestown, Lancashire, on the 21st inst., Louisa Elizabeth Ainley Mouncey, eldest daughter of Chas. J. Mouncey, M.B., and Mrs. Mouncey, aged 19 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CORONER, THE MEDICAL MAN, AND THE JURYMEN.

A SINGULAR discussion took place at the Lambeth coroner's court on Jan. 23rd. Mr. John Troutbeck, the coroner, was holding an inquiry regarding the death of a child, aged two months, who had been suffocated whilst in bed with its parents. Evidence was given by a medical man who had been sent for when the death was discovered, and Dr. Ludwig Freyberger was summoned to describe the cause of death. At this point a juryman said: "I should like to ask why a second doctor was called in." To this the coroner replied: "Because I chose." The juryman now expressed the opinion that the course taken "was most unfair," and was in return promptly informed by the coroner: "It has nothing to do with you, Sir." The foreman of the jury here interposed with a remark which, according to the published reports, seems not to have advanced beyond the opening words when the coroner abruptly refused to allow any discussion on "a question of general policy." The foreman, however, persevered and eventually succeeded in saying: "I think the doctors who devote their lives to the service of the people should be called." When addressing the jury in his summing-up the published accounts of the incident describe the coroner as saying: "This is a question of a case which requires special skill, and that is not possessed by all general medical practitioners. It would be just as well to say that all doctors possessed special skill in surgery and many other things. It is not a question of ordinary but of special skill and evidence."

Without commenting on the circumstances of this individual case, we may express the opinion that no exceptional pathological skill is required for the examination of a case of asphyxia. The calling of special witnesses to give evidence of a purely pathological nature is a subject which requires very careful consideration and has already been discussed at great length in the columns of THE LANCET.

THE ACTION OF ANÆSTHETICS ON PLANTS.

To the Editors of THE LANCET.

SIRS,—I recently made an experiment with a plant here which I desire to bring under your notice. The plant in question, which I have planted in a pot, is popularly known here as sensitive grass. It is "mimosa pudica." On touching the leaf at any point with the finger it immediately closes up. This is generally known, of course. I find, however, that on exposing it to the vapour of ammonia or formalin it immediately closes, but stranger still is the fact that it is susceptible to anæsthesia. If exposed to chloroform held closely (but not in contact with it) the leaf remains open and shows no response, as in the case of ammonia or formalin, but if after one and a half or two minutes the chloroform is withdrawn the *open* leaf seems quite impervious and oblivious of any stimulus, such as contact with the finger or exposure to ammonia or formalin. I do not know whether the anæsthesia of plant life is known, so venture to place the information before you.

I am, Sirs, yours faithfully,
Brisbane, Australia, Nov. 26th, 1904. R. MACDONALD.

*** Our correspondent will find an annotation on the subject in THE LANCET of Jan. 9th, 1904, p. 108.

AN UNFORTUNATE DEPARTURE.

THE picture post-card is now being much used by public institutions and those interested in the prosperity of certain seaside towns and health resorts as frank advertisements. This makes the issue by a medical man of a post-card displaying his house beneath which in bold type is the legend "Dr. A——'s," an unfortunate departure. The specimen which has been sent to us is one, we are informed, "of numerous copies that have been going the rounds through the post here," and would certainly serve to instruct the public where the medical man in question could be found. The mischief of the card entirely depends on what is implied in "going the rounds." If the cards have been sent only to Dr. A——'s patients no harm has been done but if there has been anything like a broadcast distribution of them the medical man in question has erred.

THE CLIMATE OF MANILA.

To the Editors of THE LANCET.

SIRS,—I should be glad if any of your readers would kindly give me any information in the correspondence columns of THE LANCET as to the climate of Manila and its suitability as a residence for one troubled with chronic bronchitis.

I am, Sirs, yours faithfully,
Jan. 21st, 1905. H.

THE "NORMYL CURE."

A CORRESPONDENT has forwarded to us some literature dealing with the treatment for intemperance which goes under the name of the "Normyl Cure." Its usefulness is apparently vouched for by the Rev. Hugh B. Chapman, vicar of St. Luke's, Camberwell. Our correspondent seeing that a technical description would be furnished to any medical man, wrote for the same, and when he had received it forwarded it to us. From this we learn that the chief constituent of "Normyl" is prepared from a member of the group of plants known as "the aristolochia," combined with sundry other nerve tonics and sedatives. While not denying that drug treatment has its uses in restoring to health those who are intemperate—atropine, for instance, has, we believe, been used with success—we rather doubt the wisdom of anyone, however honest and well meaning he may be, giving testimonials as to the "cure" of drunkenness. The best thing for the proprietor of the "Normyl cure" to do would be to submit it to the Government inspector of inebriate homes who would, we doubt not, be enabled to make an extensive trial of the same under the very best scientific safeguards.

LADY HOSPITAL MANAGERS.

To the Editors of THE LANCET.

SIRS,—The Royal Portsmouth Hospital may be added to the list named by your correspondent, in which ladies act on the committee of management. We have four in a total of 36 members. The addition was made some years ago with a certain amount of fear and trembling on the part of some members of the committee but the change has worked well. There are many matters associated with household management and domestic thrift in which the advice and judgment of a lady are most valuable.

I am, Sirs, yours faithfully,
Southsea, Jan. 22nd, 1905. HENRY RUNDLE.

THE CASE OF DR. A. D. GRIFFITHS.

To the Editors of THE LANCET.

SIRS,—Will you kindly announce the following additions to the amount promised towards the Arthur Griffiths testimonial fund?

	£	s.	d.		£	s.	d.
Amount previously acknowledged	15	4	0	Mr. W. D. J. Morris ...	0	10	6
Dr. J. Tatham Thompson	1	1	0	Dr. Herbert Vachell ...	1	1	0
Mr. Alfred Rees	0	5	0	Dr. Thomas Wallace ...	1	1	0
Dr. J. Hugh Rees	0	5	0	Dr. William Sheen	1	1	0
Mr. Cornelius A. Griffiths	0	10	6	Dr. William Martin... ...	0	10	6
Dr. S. Allan Shiach	0	5	0	Mr. R. Tudor Thomas ...	0	10	6
				Mr. T. Garrett Horder ...	0	10	6

I am, Sirs, yours faithfully,
23, The Walk, Cardiff, Jan. 23rd, 1905. ALEX. P. FIDDIAN.

IS LEPROSY CURABLE?

TREATMENT with leprolin, the new serum prepared by Captain E. R. Rost, I.M.S., is being tried in several of the Indian asylums of the Mission to Lepers in India and the East. At Purulia in Bengal (where the society supports 600 lepers) three cases are declared by the deputy sanitary commissioner of the district to be "to all intents and purposes completely cured." Others show less favourable results. The hopeful cases will be isolated and observed for six months before a final decision can be pronounced. If found to be of lasting benefit the society will adopt the treatment in others of its 42 asylums in India and the East.

A WARNING.

To the Editors of THE LANCET.

SIRS,—It cannot be too widely known that a youngish, fair, foreign-looking man, about 5 feet 4 inches, without hair on his face, is visiting the houses of medical men in the South Kensington district about a quarter past eight in the morning with a bogus message "to go directly" and whilst it is being delivered upstairs makes off with the coats available.

I am, Sirs, yours faithfully,
Jan. 11th, 1905. G.P.

THE FEES OF MEDICAL WITNESSES.

To the Editors of THE LANCET.

SIRS,—Last week I had to give evidence at the quarterly sessions in a case of wounding. Before the case came on I was asked to give a receipt for my fees and noticed that 13*s.* was allowed for expenses. I was not paid at the time, but the money was sent afterwards with a deduction of 10*s.* and a message that a mistake had been made and that only 3*s.* could be allowed for expenses. The distance from home was 11 miles and I was detained all day, so that I had to get lunch. The 3*s.* barely covers the train fare.

I am, Sirs, yours faithfully,
Jan. 23rd, 1905. M.D.

*** By the Order of the Home Office "reasonable travelling expenses may be paid where the witness has to travel more than two miles to give evidence." What may be considered reasonable is practically in the discretion of the officials.—ED. L.

IMPROVEMENTS IN THE TECHNIQUE OF VACCINATION.

To the Editors of THE LANCET.

SIRS,—There are at present two methods in use for ejecting the vaccine from the usual vaccine tube. In both the two ends of the tube are broken off; then in the first method the operator blows out the vaccine with his mouth; in the second he uses a small rubber cap. The first is dangerous and the second is cumbersome. A better plan is to remove only one end of the tube, preferably that which contains least air, and to warm the other (closed) end with a lighted vesta. The whole

of the vaccine may in this way be ejected directly into scarifications or if preferred on to a lancet or watch-glass. All risk of sterilising the vaccine is avoided by holding the tube in the left hand while the match is held in the right. Both from the points of view of asepsis and of convenience the method seems to have distinct advantages.

I am, Sirs, yours faithfully,

London Hospital, Jan. 19th, 1905. H. S. SOUTTAR.

YANATAS.

To the Editors of THE LANCET.

SIRS,—*Apropos* of remedies for seasickness there is a remedy named "Yanatas" sold by the Yanatas Company, Limited, 1, Granville House, Arundel-street, Strand, W.C. Will you kindly inform me what is the composition of this liquid (orange coloured and of a narcotic odour) and also whether in your opinion it would be safe to administer it continuously for the cure of insomnia? This question is of public importance, since Yanatas is recommended as a cure for "sleeplessness and all disorders of the nervous system."

I am, Sirs, yours faithfully,

Cobham, Jan. 23rd, 1905. J. L. W. KITCHING.

*** We do not know the composition of the liquid referred to but shall be pleased to submit a sample forwarded by our correspondent to analysis.—ED. L.

THE LANCET IN 1846.

A CORRESPONDENT sends us the following interesting extract from "The Newspaper Press Directory for the Year 1846, published by C. Mitchell at his Town and Country Advertising Office, Red Lion Court, Fleet Street, London":—

LANCET.

Saturday. Price 8d. Established October 1, 1823.

ADVOCACY. Medical and Chemical Sciences—Politics—Liberal—Anti-Poor-Law. This periodical is well known to be conducted with great ability by Mr. Wakley, M.P., the Coroner; and though, of course, principally devoted to medical topics, the active reforming spirit of its Editor imbues it with more of what may be called an *aggressive* character; and induces on its part a more severe sort of censorship over the authorities, than may be observed in its powerful professional rival. In particular, it exhibits all his uncompromising hostility to the new Poor-law. And the close connexion of the science and practice of medicine with many important departments of jurisprudence and of law (as on the bastardy clauses of the Poor-law, the medical attendance on unions, sanitary regulations, &c.) offers abundant opportunities for animadversion and attack on the administration of the existing order of things. This journal is thus brought into closest connexion, or rather collision, with the Poor-law authorities throughout the country; and the incessant avocations of its editor, whether as Senator or Coroner, supply constant incentives to exertion and continual stimulations to attack, on some subject or other. Published by John Churchill, 46, Princes Street, Soho.

The following is the wording of the title-page of THE LANCET in 1846:—

THE LANCET. A Journal of British and Foreign Medical and Chemical Science, Criticism, Literature and News. MDCCCXLVI. In Two Volumes Annually. Volume I. Edited by Thomas Wakley, Surgeon, M.P. for the Metropolitan District of Finsbury, and Coroner for the County of Middlesex. London: Printed for the Editor, and published by John Churchill, Princes Street, Soho.

The page was very nearly as large as that of to-day and the column was of the same size—viz., three inches by nine inches—with two columns to the page. The first week's number of the year consisted of 28 pages and the last number of the year 24 pages. The index consisted of 14 pages for Volume I. and 10 pages for Volume II. and there was no separate list in the index of the illustrations. The total number of pages in Volume I. amounted to 726 and in Volume II. to 714, or a total for the year of 1430, whereas for the first half year alone of 1904 the total number of pages, including the index, amounted to 1882. Although the extract quoted above states that THE LANCET was established on Oct. 1st, 1823, as a matter of fact the first issue was dated Sunday, Oct. 5th, 1823, and was published by G. L. Hutchinson at THE LANCET Office, 210, Strand, where all communications for the Editor were "requested to be addressed (post paid)."

THE CHOICE OF AN ANÆSTHETIC.

To the Editors of THE LANCET.

SIRS,—In reply to "Hector" in THE LANCET of Jan. 21st, having had a varied experience in the administration of all kinds of anæsthetics in villages in remote parts and also in hospitals and in private in the west end of London, I venture to advise "Hector" as follows: Use ether as your anæsthetic and for children in a Rendle's mask, for adults a "Clover." Do not use a "Junker" for chloroform, it will only prove a success in the hands of those who are almost daily using it. I advise ether on account of its safety over other anæsthetics.

I am, Sirs, yours faithfully,

Chichester, Jan. 23rd, 1905. A. M. BARFORD.

Jack.—Influenza must by treated as is any other specific fever—i.e., the patient must rest in bed and the diet must be light.

E. L. P.—We have not examined the preparation but we will do so if our correspondent will forward us samples.

Irish Reader.—We should have nothing to do with the apparatus in question.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9. 30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (1st).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Annual Meeting. Specimens will be shown by Mr. Targett, Mr. Handley, Dr. F. H. Taylor, and Mr. Bland-Sutton. Short Communication:—Dr. E. W. H. Groves: A New Operation for the Cure of Vaginal Cystocele. The President (Dr. Malins): Annual Address.

THURSDAY (2nd).—RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.15 P.M. Messrs. Newton and Son will show Dr. T. Holland's X Ray Diaphragm Compressor. Paper:—Dr. C. A. Wright: Some Points in the Construction of a High Frequency Machine (accompanied probably by some novel exhibits).

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M. Clinical Cases.

FRIDAY (3rd).—SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Exhibition of Ethyl Chloride Inhalers before and after the meeting. Papers:—Mr. Wade: On the Presence of Ethyl Chloride in Commercial Chloroform.—Mr. B. Hird: Ethyl Chloride in Eye Practice, with an Account of a Fatality.—Dr. Barton: Continuous Administration of Ethyl Chloride in Operations about the Upper Air Passages (followed by discussion to be opened by Dr. McCardie).

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.). 8.45 P.M. Paper:—Dr. Annis: Immunity against Disease.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Mr. C. A. Parker, Dr. F. Spicer, Mr. P. de Santi, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. M. H. Macleod: Clinique. (Skin.) 5.15 P.M. Dr. H. Tilley: Nasal Catarrh, its Causes, Diagnosis, and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—5 P.M. Dr. Saunders: Congenital Syphilis and its Treatment, with cases.

TUESDAY (31st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Clinique. (Medical.) 5.15 P.M. Mr. H. B. Robinson: On Diseases of Ducts of the Breast.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. M. Moullin: Anterior Displacement and Stenosis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Mr. H. W. Carson: Diseases of the Naso-pharynx.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten: Polioencephalitis, its Relation to Poliomyelitis.

WEDNESDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. G. Freyer: Clinique. (Surgical.) 5.15 P.M. Mr. A. W. M. Robson: Pancreatic Cysts and Pancreo-lithic Catarrh.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—Mr. S. Low: Oro- and Laryngo-pharynx.

THURSDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. T. W. Eden: Acute Torsion of the Pedicle in Pelvic Tumours.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Cardiac Disease: Treatment.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture: Dr. J. E. Squire: "Murmurs" not dependent on Diseases of the Heart. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Dr. McCann: The Treatment of Pruritus and Allied Conditions.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Parsons: Glioma of the Retina.

FRIDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Ear).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Surgical Treatment of Chronic Gastritis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten: Nerve Terminations in Muscle.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1904, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 26th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 20	30·30	E.	...	40	40	32	37	38	Overcast
,, 21	30·15	S.E.	...	51	40	32	33	34	Foggy
,, 22	30·30	N.E.	...	40	37	33	35	37	Overcast
,, 23	30·29	S.E.	...	42	42	33	36	37	Overcast
,, 24	30·22	S.	...	49	47	36	40	42	Foggy
,, 25	30·30	W.	...	59	47	42	44	45	Foggy
,, 26	30·68	N.E.	...	50	40	34	33	35	Fine

During the week marked copies of the following newspapers have been received:—*Westminster Gazette, Surrey Advertiser, Reading Mercury, Mining Journal, Local Government Chronicle, Daily News, Liverpool Post and Mercury, Daily Chronicle, Standard, Literary Digest, Aberdeen Weekly Free Press, Plymouth Mercury, Freeman's Journal, Hertfordshire Mercury, Windsor and Eton Express, Liverpool Courier, Eastbourne Chronicle, Morning Leader, St. James's Gazette, Manchester Evening News, Newcastle Daily Chronicle, Newcastle Journal, Bath Weekly Argus, &c.*

Communications, Letters, &c., have been received from—

A.—Mr. F. Alcan, Paris; Aymard Patent Milk Steriliser Co., Ipswich; A. H. C.; A. B., Brighton; Dr. H. Armstrong, Liverpool.

B.—Mr. L. C. Broughton, Birmingham; Mr. Richard Bell, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Birmingham University, Secretary of; Messrs. W. Ballantyne and Son, St. Boswells; Dr. J. L. Bunch, Lond.; Bovril, Ltd., Lond.; Bristol Royal Infirmary, Secretary of.

C.—Dr. George Crichton, Lond.; C.V.S.; C. F.; Messrs. A. Constable and Co., Lond.; Messrs. Clarke, Son, and Platt, Lond.; C. S. T.; Mr. F. W. Clarke, Chorlton-cum-Hardy.

D.—Dr. med. Dreuw, Hamburg; Dr. H. E. Dixey, Malvern; Mr. D. N. Dunlop, Lond.; Devonshire Hospital, Buxton, Secretary of; Messrs. A. De St. Dalmas and Co., Leicester.

E.—E. A. T.

F.—Mr. A. G. R. Foulerton, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; F. E. S.

G.—Mr. F. R. Gibbs, Bourne End; Mrs. Gordon, San Remo; Messrs. R. W. Greeff and Co., Lond.; *General Practitioner*, Editor of; Messrs. Gaymer and Co., Attleborough.

H.—Mr. W. Hughes, Waenfawr; Hotel Tariff Bureau, Lond.; Mr. J. J. Hicks, Lond.; Mr. Samuel Hart Hammond, Latchingdon.

I.—Messrs. Idris and Co., Lond.; International Plasmon, Lond.

J.—J. T.

K.—Mr. N. C. King, Lond.; Kent and Canterbury Hospital, Secretary of; Kreochyle Co., Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Dr. T. D. Luke, Edinburgh; Messrs. Lee and Nightingale, Lond.; Mr. A. Lawson, Lond.; Dr. Lane, New Seaham; Dr. N. B. Lennon, San Francisco, U.S.A.; Leeds Infirmary, Secretary of; Dr. J. Livingstone Loudon, Hamilton.

M.—Mr. J. Stafford Mellish, Lond.; Messrs. Manlove, Alliott, and Co., Nottingham; Manchester Guardians, Clerk of; Messrs. Michell, Goodman, Young, and Co., Lond.; Mr. E. Merck, Darmstadt; Dr. W. Murrell, Lond.; Messrs. McKesson and Robbins, New York; Maltine Manufacturing Co., Lond.; Mr. Rutherford Morison, Newcastle-on-Tyne.

N.—Dr. F. E. Nuttall, Accrington; Messrs. Newton, Chambers, and Co., Thorncliffe; Dr. J. Neil, Oxford; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.

O.—Messrs. Ornstien Bros., Lond.; Our Dumb Friends' League, Lond.

P.—Mr. John Plummer, Sydney; Dr. J. P. Parkinson, Lond.; Mr. R. J. H. Parkinson, Mablethorpe; Messrs. Peacock and Hadley, Lond.; P. B. O. C.

R.—Mr. E. B. Russell, Torquay; Rochdale Infirmary, Secretary of; R. H. M.; Rebman, Ltd., Lond.; Messrs. Reynolds and Branson, Leeds.

S.—Dr. D. Sandler, Constantinople; Sheffield Royal Hospital, Secretary of; Smedley's Hydropathic Co., Matlock; Society of Arts, Lond.; Scottish Poor-Law Medical Officers' Association, Lond.; Scholastic, Clerical, &c., Association, Lond.; Messrs. G. Street and Co., Lond.; Messrs. N. Smith and Co., Cheltenham; Mr. J. W. Staniforth, Hinderwell.

T.—Dr. H. N. A. Taylor, Lond.; Torquay Medical Society, Hon. Secretary of; Transvaal, Medical Officer of Health of the; Mrs. Tetley, Kirby Moorside; Therapeutical Society, Lond., Secretary of.

V.—Mr. J. W. Vickers, Lond.; Vauxhall Ironworks Co., Lond.; Mr. S. G. Vinter, Torpoint.

W.—Dr. W. Williams, Cardiff; Dr. E. J. Wood, Wilmington, U.S.A.; Messrs. Waltham Bros., Lond.; Dr. T. J. Walker, Peterborough; Dr. R. T. Williamson, Manchester; Mr. H. Whiting, Lond.; Mr. W. P. Warburton, Skirlaugh; W. L. H.; Fleet-Surgeon W. A. Whitelegge, R.N., Valetta; Messrs. H. Wilson and Son, Lond.

Z.—Messrs. C. Zimmermann and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. J. Astier, Asnières; A. L.; Dr. J. H. Arthur, Lond.; A. R.; A. S. M. D.; Dr. R. A. Anderson, Gulfport, U.S.A.; Mr. E. Arnold, Lond.

B.—Mr. E. H. Beaman, Misterton; Mr. J. T. Brickwell, Lavenham; Mr. G. C. Ball, Frinton-on-Sea; Bayer Co., Lond.; Messrs. Bonthron and Co., Lond.; Bank of Bengal, Lucknow, Manager of; Dr. G. S. Blandy, Framlingham; Mr. W. W. Baldwin, Rome; Miss Bullen, Lond.; Dr. Duncan Brown, Newport, Mon.; Dr. C. L. Birmingham, Dublin; Mr. L. H. Bruce, Toronto; Dr J. G. Bailey, Worcester; Mr. W. D. Betenson, Hatch End; Messrs. W. E. Baxter, Lewes; Mr. G. P. Butcher, Plymouth; Messrs. J. H. Booty and Son, Lond.; Dr. G. Byres, Aberdeen.

C.—Mr. A. Campbell, Furnace; Dr. H. Campbell, Lond.; Messrs. Colgate and Farnell, Eastbourne; Chalmers Hospital, Banff, Matron of; Mr. W. H. Cleveland, Selby; Dr. C. W. Chaplin, Angmering; Dr. S. R. Collier, Wimbledon; Cardiff Infirmary, Secretary of; C.B.K.; Mr. Chatham, Seaforth; Mr. R. A. Caldwell, Bournemouth; Mr. A. Coleridge, Bristol; Mr. E. Cooke, Aspull; Messrs. Cock, Russell, and Co., Lond.; Cumberland, &c., County Lunatic Asylum, Carlisle, Secretary of; Dr. W. Cowie, Charlton.

D.—Mr. J. D. Davidson, Perth; Mr. N. Davis, Lond.; Lieutenant-Colonel M. Dundon, R.A.M.C., Devonport.

E.—E. G.

F.—Mr. F. H. Foulds, Droitwich; Messrs. Ferris and Co., Bristol; Mr. T. M. Fry, Cranbrook; Dr. W. F. Fergusson, Painswick; Miss Foot, Lond.

G.—Dr. R. A. Glegg, Birmingham; Professor A. De Giacomo, Naples; Messrs. C. Griffin and Co., Lond.; Dr. E. A. Gates, Lond.; G. R. Y.; Mr. R. J. Godlee, Lond.; G. P.; Staff-Surgeon H. W. Gordon Green, R.N., Southsea; G. B.

H.—Mr. J. Heywood, Manchester; Mr. A. F. Heald, Lond.; Mr. W. B. Harley, Hove; Mr. W. H. Hubert, Billingshurst; Mr. E. Hemsted, Kintbury; Dr. C. F. Harkin, Chiltern, Australia; Halifax Corporation, Clerk of; Mr. E. R. Hunt, Hove; Messrs. Hogg and Son, Lond.; Mr. J. Harris, Lond.; Mr. H. E. Harmer, Beccles; Messrs. Heald and Goodwin, Lond.; Mr. S. Harvey, Earlestown; H. E. G.

J.—Messrs. Jacob and Johnson, Winchester; J. K. F.; J. H. H.; J. F. M. D.; J. H.; J. R. P.; Dr. R. L. Joynt, Dublin; J. G.; Dr. W. C. Johnson, Broughton; J. H., Lond.

K.—Dr. H. G. Kyle, Bristol; Messrs. Kuhn and Co., Lond.; Messrs. T. Kirby and Sons, Walsall.

L.—Dr. H. Lloyd, St. Asaph; L. F.; Mr. R. E. Lauder, Southampton; Mr. R. R. S. Lipscomb, Starcross; Mr. H. K. Lewis, Lond.; Mr. E. Leavy, Geraldton; Mr. H. Le Soudier, Paris; Mr. H. Littlewood, Leeds; Dr. W. C. Lippincott, Seattle, U.S.A.; L. C. B.; Messrs. Lee and Martin, Birmingham.

M.—Mr. W. Martindale, Lond.; Mr. J. McGregor, Bridgend; Mr. G. R. McDonald, Plymouth; Dr. G. W. F. Macnaughton, Lond.; Marconi's Wireless Telegraph Co., Lond., Secretary of; Manchester Royal Infirmary, Secretary of; Dr. R. O. Moon, Lond.; Messrs. T. Martin and Son, Exeter; Messrs. T. M. Mackenzie, Invergordon; Mr. J. J. MacGrath, Dunfanaghy; Medical Society of Victoria, Melbourne, Hon. Treasurer of; Medicus, Seaford; Monmouth Asylum, Abergavenny, Clerk of; Messrs. May, Roberts, and Co., Lond.; M. S. M. D.; Mr. R. W. Marshall, Manchester; Medicus, Chiswick; Messrs. Mitchell and Co., Lond.

N.—Mr. T. B. Nariman, Bombay; Nottingham General Hospital, Secretary of; Mr. A. W. Nuthall, Birmingham.

O.—O. C.

P.—Mr. F. J. Pearson, Owston Ferry; Mr. J. Pond, Norwich; Mr. E. L. Payne, Kew; Messrs. Pilkington Bros. St. Helen's; Mr. F. W. Perry, Lond.; Messrs. Preston Bros. and Co., Huddersfield; Plymouth Co-operative Drug Co., Manager of; Messrs. G. P. Putnams Sons, Lond.

R.—Mr. W. Rae, Northampton; Messrs. E. J. Reid and Co., Lond.; Miss Roberts, Hove; Royal Southern Hospital, Liverpool, Secretary of; R. T. H.; Mr. S. H. Robinson, Lisburn; Dr. W. D. Rose, Luton; Mr. A. Rose, Nairn; Dr. Clive Riviere, Lond.

S.—Dr. T. Wilson Smith, Bath; Mr. T. M. Smale, Lond.; S. C. J.; South Devon, &c., Hospital, Plymouth, Secretary of; Dr. W. A. Stephen, Loftus-in-Cleveland; Dr. Shiels, Dunbar; Dr. G. F. Still, Lond.; S. G. H.; Dr. J. W. Sutherland, Bothwell; "Scott," Liverpool; School of Physic, Dublin, Secretary of; Surgical, Wealdstone; S. H.; Miss Stevenson, Lond.; Dr. S., Lond.; Mr. H. W. Scriven, Lond.

T.—Mr. P. R. Tarbet, Stevenage; Dr. Seymour Taylor, Lond.; Mr. J. H. Thompson, Mytholmroyd; Teignmouth Hospital, Secretary of; T. H.; *The Therapist*, Lond., Manager of; Count Ivan Tolniewski, Lond.; Dr. J. B. Thomas, Llandilo.

V.—Dr. F. Vaz, Condeixa, Portugal; Vinolia Co., Lond.

W.—Mr. J. Weddick, Wailuku, Hawaii; Miss E. Wright, Lond.; W. G. G.; Dr. A. D. Waller, Lond.; Dr. R. P. White, Wigan; Mr. T. H. Waller, Chelmsford; Mr. A. O. Way, Romsey; Dr. V. H. Wyatt Wingrave, Lond.; Warneford Asylum, Oxford, Secretary of; W. J. M.; Mr. C. V. Woodcock, Bradford; Dr. F. J. Woollacott, Lond.; Mr. W. Webb, Burford; Rev. A. W. Watson, Churt.

EVERY FRIDAY.

THE LANCET.

PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements and Situations Vacant	Ditto	0 4 6
	Every additional Line	0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.